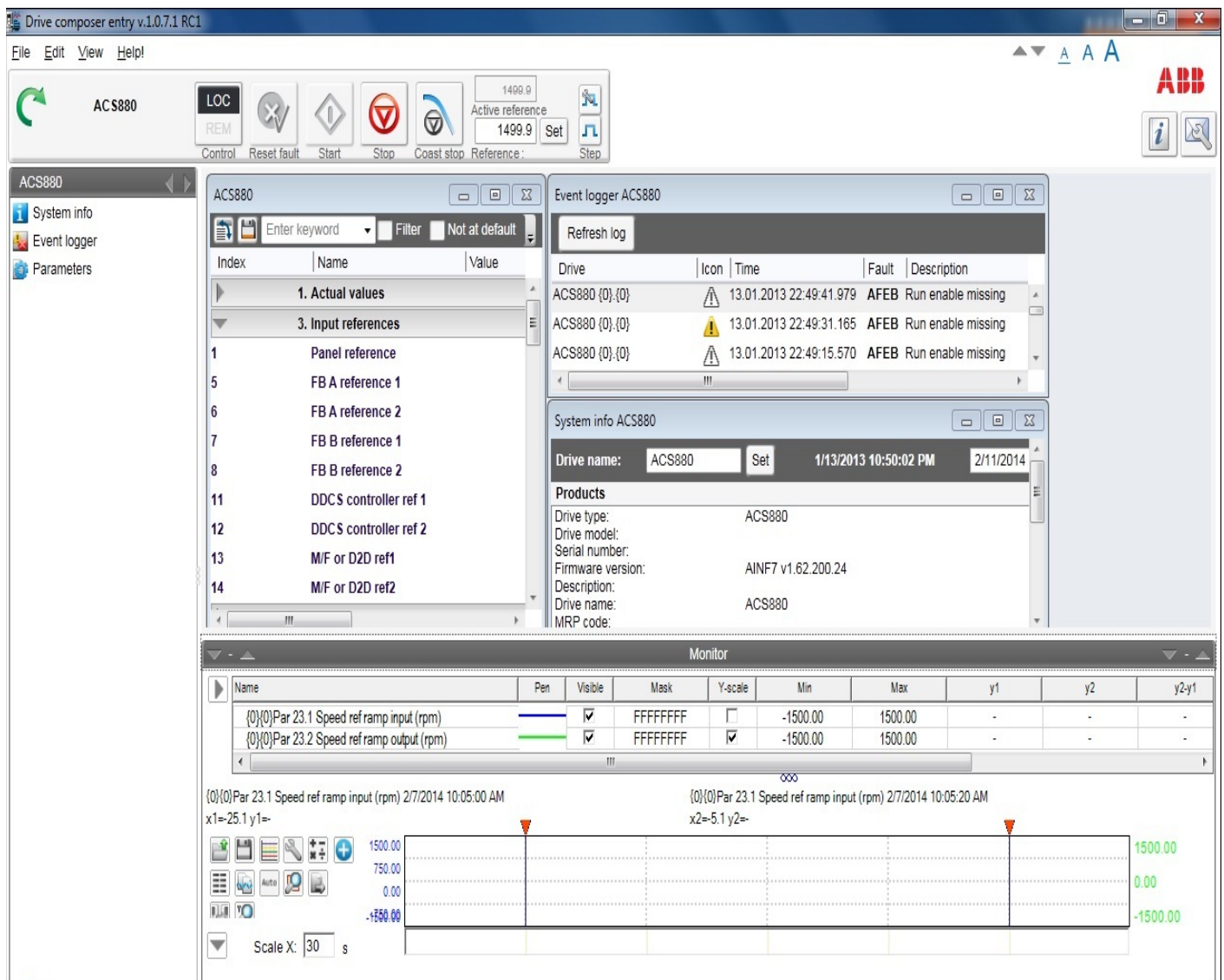


User's manual

Start-up and maintenance PC tool

Drive composer



List of related manuals

Drive firmware manuals and guides	Code (English)
<i>ACS880 primary control program firmware manual</i>	3AUA0000085967
<i>ACS580 standard control program firmware manual</i>	3AXD50000016097
Option manuals and guides	
<i>FENA-01/-11/-21 Ethernet adapter module user's manual</i>	3AUA0000093568
<i>FSO-11 safety functions module user's manual</i>	3AUA0000097054
<i>FSO-12 safety functions module user's manual</i>	3AXD50000015612
<i>FPBA-01 PROFIBUS DP adapter module user's manual</i>	3AFE68573271
Tool manuals	
<i>Drive composer start-up and maintenance PC tool user's manual</i>	3AUA0000094606
<i>Ethernet tool network for ACS880 drives application guide</i>	3AUA0000125635
<i>Adaptive programming application guide</i>	3AXD50000028574

All manuals are available in PDF format on the Internet. See section [Document library on the Internet](#) on the inside of the back cover.

User's manual

Start-up and maintenance PC tool
Drive composer

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1

Introduction to the manual

Contents of this chapter

This chapter contains information on the applicability, compatibility, target audience and the purpose of the manual. It also describes the contents of the manual.

Applicability

This manual applies to the Drive composer PC tool available in two different versions:

- Drive composer entry, DCET-01
- Drive composer pro, DCPT-01 (code: 3AUA0000108087).

Drive composer entry can be downloaded for free by navigating to www.abb.com/drives and selecting *Drive PC Tools*. Drive composer pro includes all features and is available through ABB sales channels. Both versions require registration.

Note: The features available only with Drive composer pro are indicated with (pro).

Compatibility

Drive composer is fully compatible with ACS580 and ACS880 drive families. Availability of some functions are dependent on capabilities of the drive and possibly added modules. There is a limited support (parameter editing and monitoring) for ACS800. It requires DriveWindow 2 installation on the same PC.

Target audience

The reader is expected to be an automation engineering professional or an electrician and familiar with drive products and the concepts regarding their commissioning and operation, including the parameter system of ABB drives. Also a basic knowledge of Microsoft Windows operating system is needed.

Purpose of the manual

This manual describes the Drive composer PC tool and instructs how to use it in the commissioning and maintenance of the ABB drives.

Contents

The manual consists of the following chapters:

- [Introduction to the manual](#) provides information on the applicability, compatibility, target audience and the purpose of the manual.
 - [Overview of Drive composer](#) briefly lists the main features of the Drive composer software and instructs how and where it can be run, and how to get help and additional information.
 - [Installation and uninstallation of Drive composer](#) describes how to install and uninstall the Drive composer software.
 - [Connections](#) describes how to make a connection with a drive through USB or Ethernet.
 - [Main user interface components](#) describes the main user interface components of the Drive composer PC tool, including the menus.
 - [Parameter window](#) describes how to use the parameter window.
 - [Monitor window](#) describes how to use the monitor window.
 - [Workspace handling](#) describes the workspace functionality.
 - [Event logger](#) describes how to use the event logger.
 - [Diagnostics](#) describes how to troubleshoot a drive with the **Support package** button of Drive composer and the data logger included in the drive.
 - [Control diagrams \(pro\)](#) describes how to use the control diagrams.
 - [FSO configuration](#) contains the configuration procedure of the FSO-11 and FSO-12 safety functions with Drive composer pro and provides an example of how to configure the optional FSO-11 and FSO-12 safety functions module.
 - [Other functions](#) describes functions that are common to many views, windows and functions that are not associated with any view or window.
-

Terms and abbreviations used in this manual

Term or abbreviation	Explanation
Alarm limit of monitoring	You can set a low or high alarm limit for monitoring. Color(s) of the signal(s) change(s) on the monitoring graph area if the limit is reached.
Assistant	Provides predefined steps for setting the parameters of the drive. For example, the basic start-up assistant.
Assistant control panel	Control panel with an USB connector enabling a PC tool connection for common architecture drives. Assistant control panel is a generic name for ACS-AP-I and ACS-AP-S panels.
Autoscaling	Y-axis scaling is set automatically when this button is enabled. User-defined y-axis limits are then disabled. Note: Zooming is not possible in the Autoscaling mode.
Backup	Backup of the drive. Includes all parameters, application program, user sets. ACS880 memory unit consists of FW and all the files that belongs to backup. Primary method to replace a broken drive control board is to use the memory unit from the old one. Note: Backup does not include the firmware of the drive.
Basic control panel	Control panel with limited basic functionality used with common architecture drives.
Bit mask of monitoring	You can filter bits of the Status word and monitor them individually.
Common architecture drives	For example, ACS880 and ACS580.
Compare parameters	You can compare parameters between drives or between a drive and a file to find out differences.
Control diagrams	Graphical presentation of the drive reference chain or other function. Shows online values of a parameter, switch positions and signals. Parameters can be modified online. Functionality is not available for all drives.
Copy/Download parameters	Visible parameters of a parameter window or custom parameter window are copied/downloaded to a drive.
Cursor tool	Monitor window has a double cursor tool and the positions of cursors can be freely set in the monitor window. $y_2 - y_1$ and $x_2 - x_1$ differences are calculated.
Custom parameter window	You can create windows and drag drop (copy) parameters to these windows. You can also change parameter values in the window and save the changes for using in offline mode. The Filename extension for custom parameters is *.dccustparams.
Data file viewer	In the Demo/Offline mode, the monitor window can be used as a data file viewer when saved monitored data (*.dcmon) or data logger data is analyzed.
Data logger	Signals are buffered inside a drive with a fast sample interval. Can be triggered and uploaded to the monitor window to be analyzed.
Demo/Offline	In Demo mode you can view the default parameter values and settings. In Offline mode you can set/view the saved parameter files offline.
DriveAP	Adaptive Programming of a drive. Functionality of a drive can be modified by adding some IEC 61131 -based blocks. Adaptive Programming can be done also with an Assistant control panel. Note: Adaptive Programming is not available with all drives.

Term or abbreviation	Explanation
Event logger	Can consist of faults, alarms and events. Only faults stop the drive. Latest faults and alarms are also seen in parameter interface group 4, Warnings and Faults.
FENA-11	Ethernet adapter module for ABB drives.
LOC/REM	LOC denotes local control of the drive, either with an Assistant control panel or the Drive composer PC tool. REM means that the drive is remotely controlled by the fieldbus master PLC or by I/O connections.
Lock/Unlock parameter	Parameter can be locked by a drive. You can only view the parameter values, but cannot modify them.
Macro script	User-written sequence of macro statements for reading and writing parameters/signals. Filename extension for macro scripts is *.p.
Monitoring	You can set parameters or signals to the monitor window. Values are collected with the sampling interval and drawn to a window.
NLS support	National Language Support, the user interface (UI) of Drive composer can be easily modified by editing language files found in the LANG folder of the Drive composer PC tool.
Online/Offline	Online = PC tool is connected with the drive. Offline = PC tool is not connected with the drive. In the Offline mode it is possible to open parameter files, save monitored data etc.
OPC server	OPC DA server interface for Drive composer pro that allows other programs, such as Control Builder Pro (Advanced drive programming), to communicate with the drive.
Refresh the parameter	Parameter values are updated when a group is opened. You can set parameters to the Auto-update mode or refresh the value manually. Signals are always updated automatically. Signals are bolded in the parameter list.
Report	You can use report templates for energy savings, commissioning and maintenance. Templates can be modified.
Restore	You can restore the drive. You can select the parameters to be restored during the restore operation. For example, motor identification run results can be restored or deleted during the restore operation. Can be used for cloning drives.
Save parameters	Visible parameters of a parameter window or custom parameter window are saved to a file. Filename extension for saved parameters is *.dparamsbak. Note: Some values are not editable in the Offline mode.
Support diagnostics package	You can collect all data from a drive for troubleshooting purposes by clicking a button in Drive composer or on an Assistant control panel.
Workspace	Workspace consists of the user interface status, such as parameters shown in the custom parameter window(s) and their status. You can save the current workspace status to a file and restore it later. Custom parameter windows with their contents and the monitor window contents (signals selected, scalings, colors) are saved to a workspace. You can set one default workspace. Filename extension for the workspace is *.dcxml.

2

Overview of Drive composer

Contents of this chapter

This chapter briefly lists the main features of the Drive composer software and instructs how and where it can be run, and how to get help and additional information.

Drive composer

Drive composer is a 32-bit Windows application for commissioning and maintaining ABB common architecture drives.

The full version is called Drive composer pro and the limited version is called Drive composer entry.

Both versions include a demo that allows testing user interface functionality, edit parameter files offline (pro) or open and analyze saved monitored files without connecting to a physical drive.

Highlights

With Drive composer, it is possible to:

- control a drive: start, stop, direction, speed/torque/frequency reference
 - monitor the operation and status of a drive
 - view and adjust drive parameters
 - monitor signals in numerical and graphical (trending) format
 - work simultaneously with multiple drives like master and follower drives (pro)
 - display control diagrams of a drive for parameter setting and diagnostic purposes (pro)
 - create user-specific workspaces by customizing parameter windows
 - configure the optional FSO-11 and FSO-12 safety functions module (pro)
 - handle workspaces
 - create and execute macro scripts (pro)
 - use Ethernet-based fieldbus adapter modules for PC tool communication (one-wire solution, Profinet, Ethernet IP) (pro) or a drive-embedded Ethernet port
 - use the USB port of an Assistant control panel for an USB connection
 - use an OPC-based commissioning and maintenance tool (pro).
-

Features

Feature	Drive composer entry	Drive composer pro
Parameters can be modified	Yes	Yes
Parameters can be searched	Yes	Yes
Parameters changed by the user (or automatically updated) have an orange background	Yes	Yes
Parameters can be saved to a file	Yes	Yes
Parameters can be copied/downloaded to a drive	Yes	Yes
Parameter windows can be customized	Yes	Yes
Parameters can be printed	Yes	Yes
Parameters can be edited offline	No	Yes
Parameters can be compared between parameter lists or drives	No	Yes
Data for the support service can be collected by clicking the Support package icon	Yes	Yes
As a simple monitoring method for basic purposes, up to 8 signals can be monitored	Yes	Yes
Monitored data can be saved to a hard drive of a PC	Yes	Yes
Monitored data can be exported to a PC by using the tab separated file	Yes	Yes
For a professional analysis of a single drive or multidrive, maximum 26 signals can be monitored	No	Yes
Contents of an event logger (faults, warnings) can be viewed	Partly	Yes
Contents of the System info (drive serial number, modules, versions, SW etc.) can be viewed	Yes	Yes
Full backup/restore can be used for restoring or cloning a drive	Yes	Yes
Full backup/restore of multidrives can be used for restoring or cloning in a network of drives	No	Yes
PC can be used to analyze the data logged in a drive by a data logger	No	Yes
Macro scripts can be created and executed	No	Yes
Safety settings can be configured to a safety functions module (FSO)	No	Yes
Point-to-point USB can be connected through a panel port	Yes	Yes
Network drives can be connected via Ethernet or with a panelbus	No	Yes
Control diagrams of a drive can be used for parameter setting and diagnostic purposes	No	Yes
User interface is available in different languages	Yes	Yes
Create and edit Adaptive Programs	No	Yes

Hardware and software requirements

■ Drive composer hardware

- USB type A (PC) type mini B (panel) cable for connecting Drive composer entry/pro through the USB port of the control panel to a drive (max 3 m)

Note: We recommend ferrite core cables.

- Ethernet cable RJ45 if the connection is made through the FENA-11 or embedded Ethernet

■ Computer hardware

- IBM compatible PC
- Pentium 2000 MHz or a faster processor (Dual-core or better recommended)
- 1GB RAM
- 1024 x 600 display resolution with 256 colors
- At least 150 MB free hard disk space
- CD drive
- One free USB port or Ethernet port

■ Software

- Operating system Windows XP, Vista, Windows 7 or Windows 8 (32- or 64-bit operating system)
- Microsoft.NET Framework 4.5.1 is required for Windows 7/Windows 8 or 4.0.3 for Windows XP.

Note: Update the latest version of Microsoft.NET Framework on your PC.

3

Installation and uninstallation of Drive composer

Contents of this chapter

This chapter describes how to install and uninstall the Drive composer software.

Determining the current Drive composer version

To know the version of the Drive composer PC tool, select **About the product** in the **Help** menu. The **About the product** dialog box displays the Drive composer version.



Figure 1. About the product dialog box

Installing Drive composer with the installer

It is recommended to uninstall all previous versions of Drive composer before installing a new version. Close all applications before starting the installation.

1. Run the *setup.exe* file from the folder where you unzipped the Drive composer files.
2. With Windows 7, right-click on the *setup.exe* file and select **Run as administrator**.

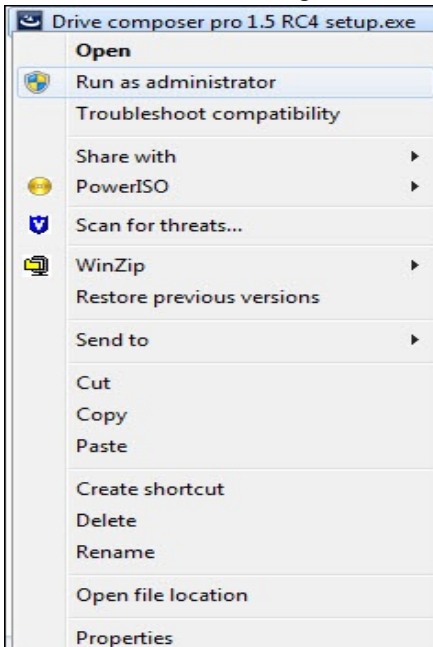


Figure 2. Run as administrator

3. In the **Drive composer pro - InstallShield Wizard**, click **Next >**.



Figure 3. Drive composer 1.5.0.1 setup wizard window

4. Choose the destination folder and click **Next >**.

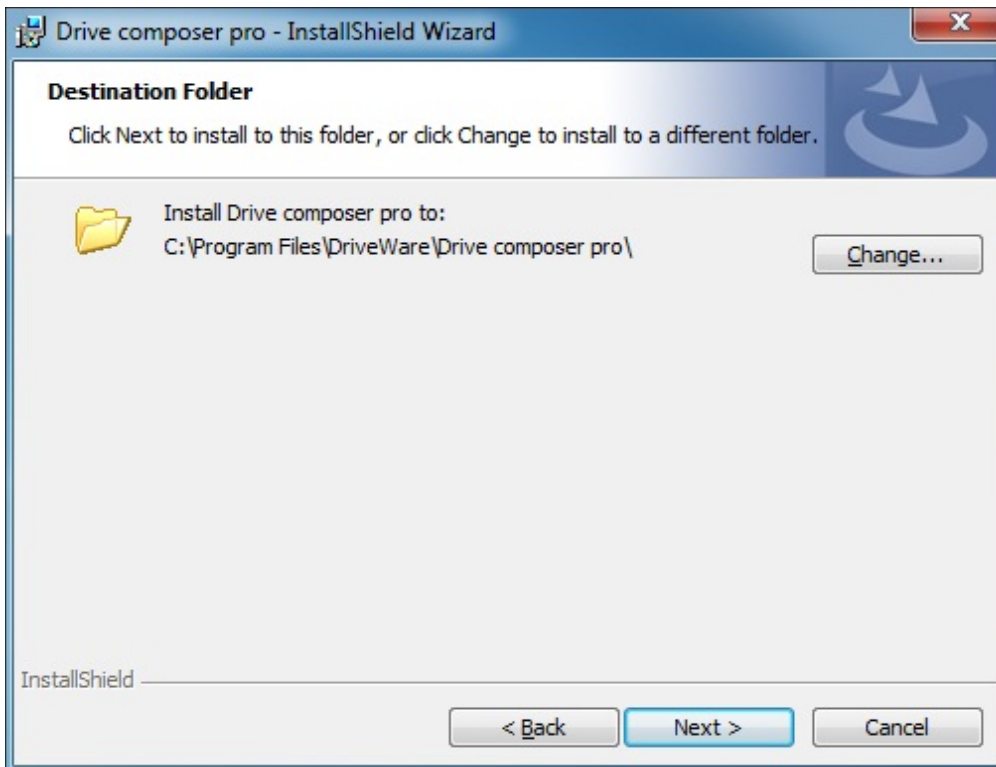


Figure 4. Destination folder window

5. Click **Install** to start the installation.

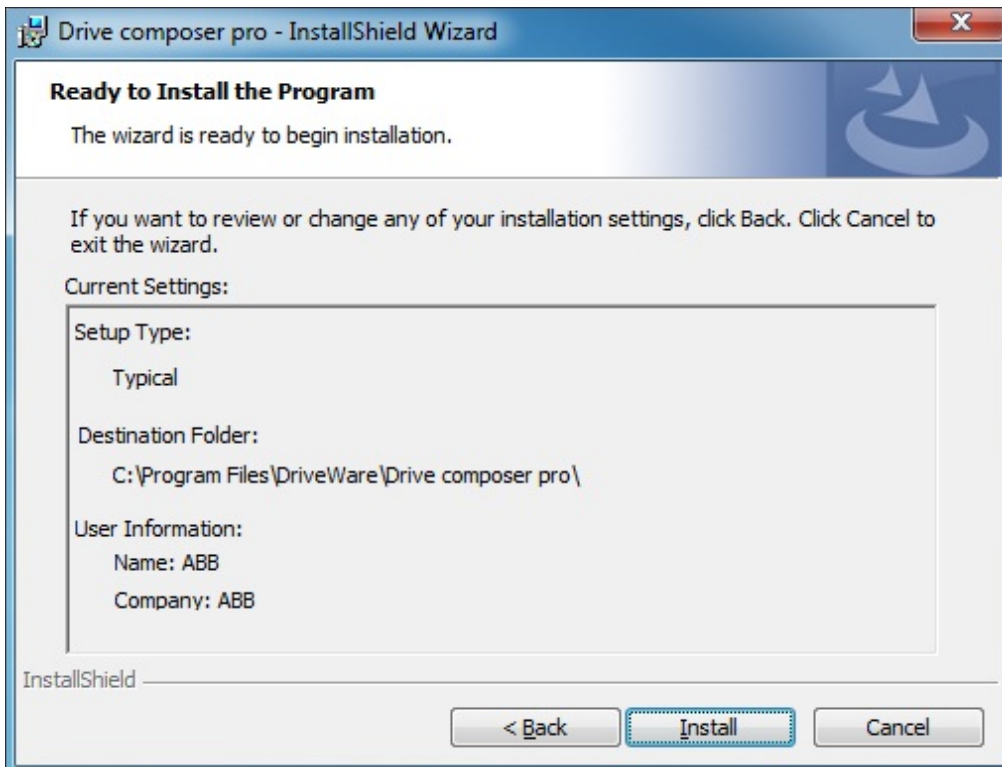


Figure 5. Installation

If Drive composer installation is complete, click **Finish**. Now the Drive composer is ready for use.

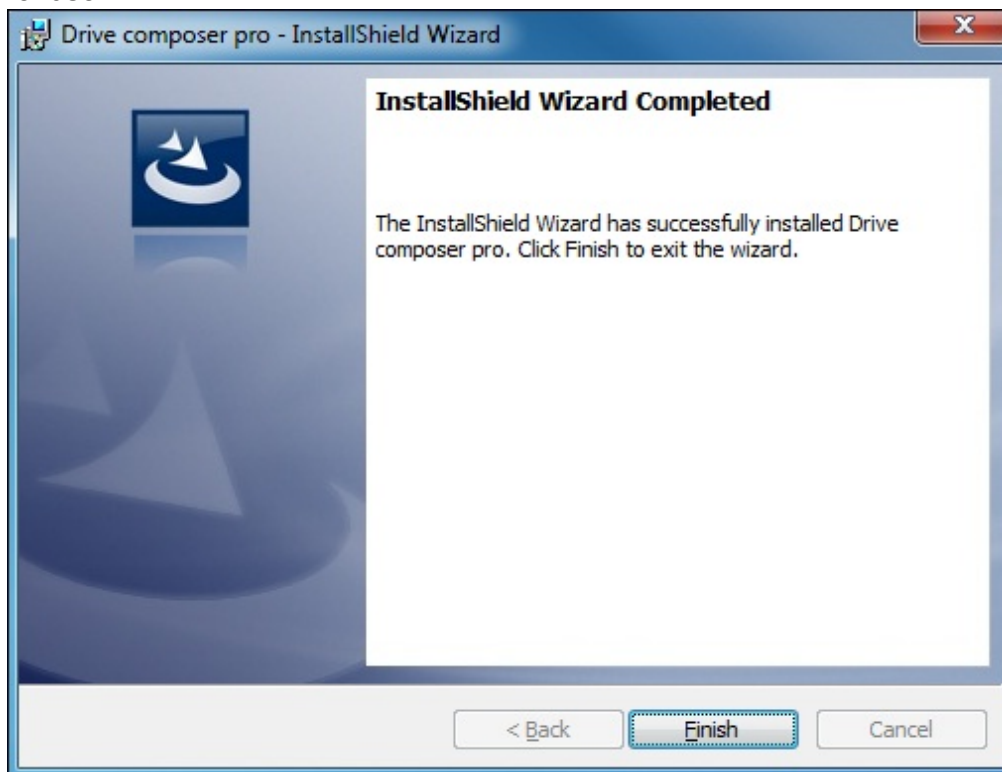


Figure 6. Installation Complete window

Uninstalling Drive composer with the installer

1. In the **Control panel** → **Programs** → **Program and features** window, select the installed Drive composer pro program and click **Uninstall**.

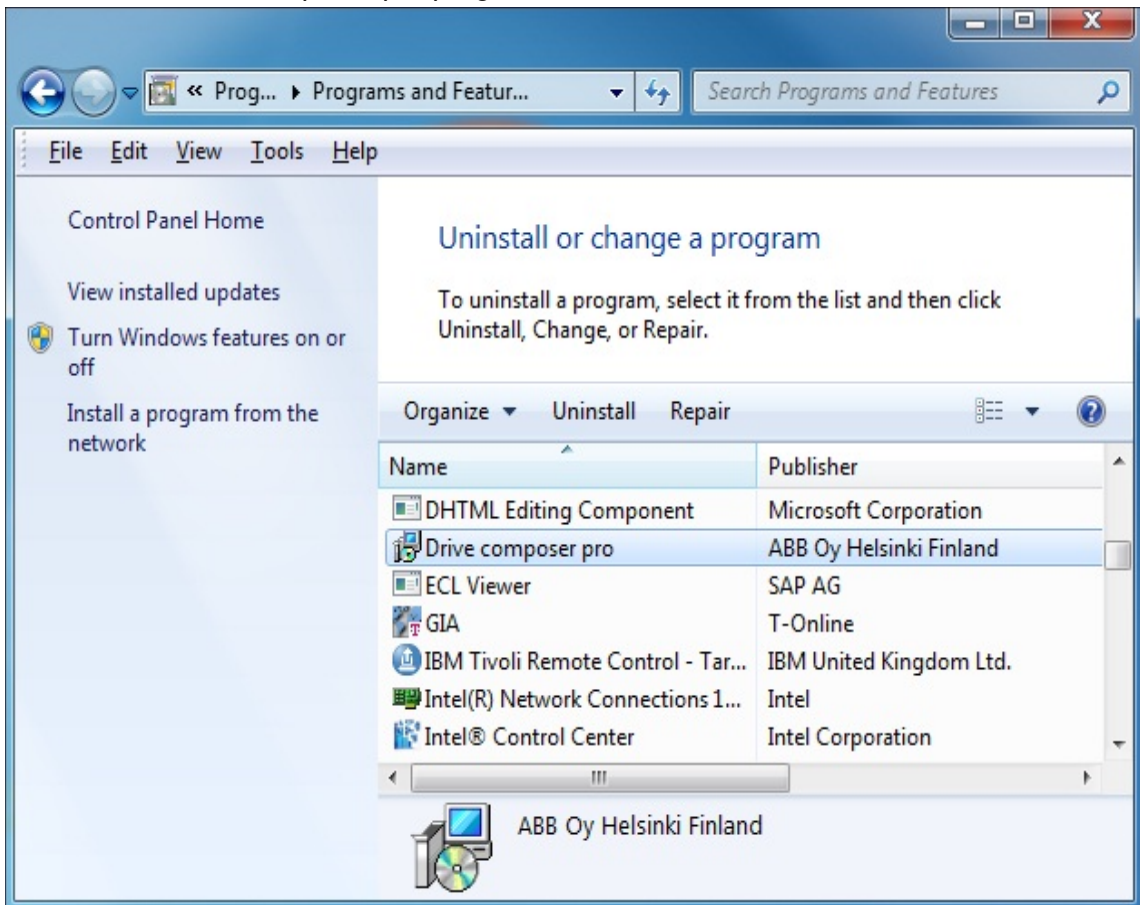


Figure 7. Removing Drive composer

2. Click **Yes** to uninstall Drive composer pro application.

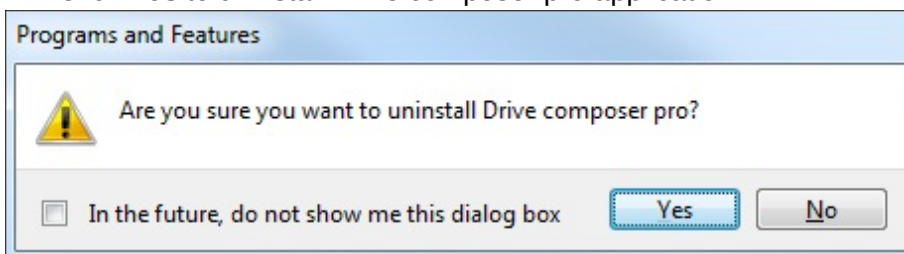


Figure 8. Confirming the removal of Drive composer

4

Connections

Contents of this chapter

This chapter describes how to make a USB connection or an Ethernet connection to an ABB drive with Drive composer.

Assistant control panel drivers

You can connect an ABB drive to an Assistant control panel (ACS-AP-x) through USB by installing the required USB device drivers. Drive composer installer installs the required drivers automatically, so no user actions are needed.

In case of any problems with automatic installer the USB drivers can be manually installed by downloading the tool from software tools website:

<http://new.abb.com/drives/software-tools/drive-composer>

Obey the instructions provided with the drive package.

Connecting to a drive with an Assistant control panel for the first time

To establish a connection between Drive composer and drive, connect a USB type A (PC) type mini B (panel) cable to the USB port of the computer and the USB port of the Assistant control panel (ACS-AP-x panel). The maximum length of the USB cable should be 3 m. If the drive is used without an Assistant control panel or with a Basic control panel, use separate USB/485 adapter to establish connection between Drive composer and drive.

1. Connect your PC to the Assistant control panel with a USB cable.

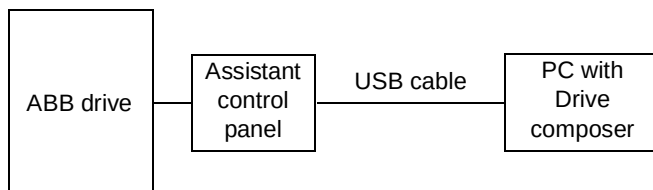


Figure 9. USB connection between Assistant control panel and PC

The following text appears on the Assistant control panel screen: "USB connected".

Note: The Assistant control panel cannot be used when it is connected to a PC.

2. Launch Drive composer by double-clicking **Drive composer entry/pro.exe**.
3. Click **Connect** if you want to connect to the drive or click **Demo** if you want to choose the Offline mode. You can also select the dedicated connections to the drive:

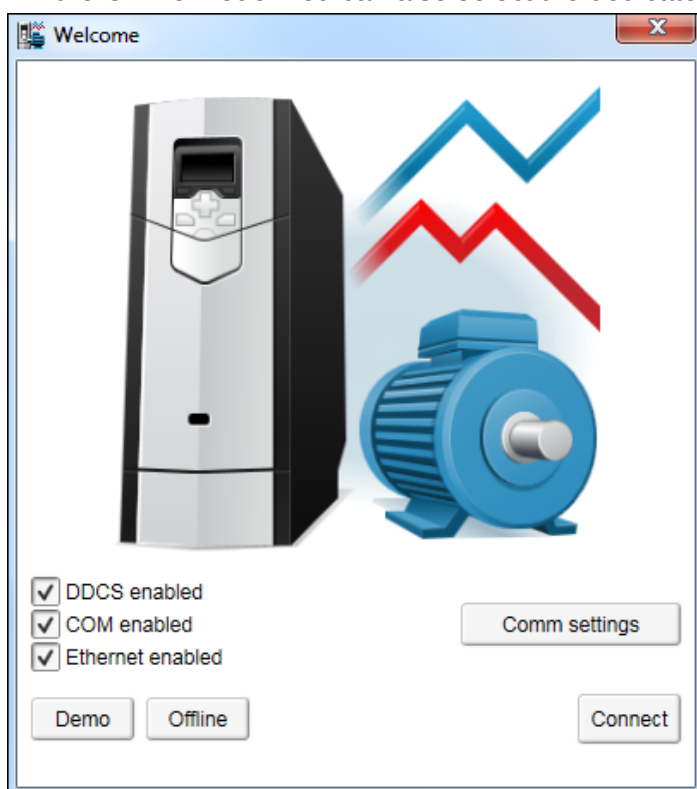


Figure 10. Connect/Demo button

- DDCS enabled - Connects to the drive through DDCS (fiber optic) communication. This option is applicable to ACS800 drive type only.
- COM enabled - Connects to the drive through USB connection. Use this option only when you want to connect to the drive through serial connection, example, USB cable to ACS-AP-x panel.
- Ethernet enabled - Connects to the drive through Ethernet network
- Comm settings - Opens another dialog where you can configure the connections in more detail other than the above three options.

Note:

- The status LED starts flickering in the Assistant control panel indicates data transfer between drive and PC. The LED keeps blinking as long as there is a PC tool connected to the drive. The welcome dialog box is shown on the screen indicating that the application is being initialized.
- First time connection, parameter texts are loaded from the drive and this might take few minutes depending on the drive type.

Drive composer loads parameters and the following window displays.

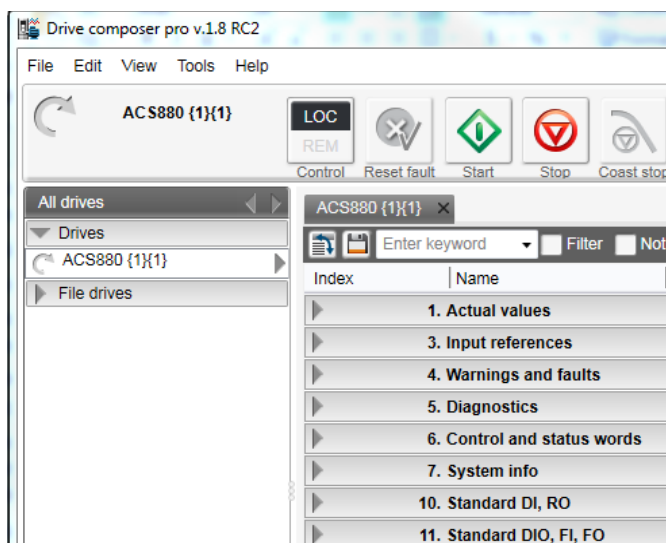


Figure 11. Parameters loaded

You have now an online connection to the drive. If you have a single drive and a point-to-point connection, move to chapter [Parameter window](#).

4. If you failed to make an online connection to the drive, go to **View** → **Settings** to check your COM settings and click **View** → **Refresh** (Ctrl + R) to reconnect Drive composer to the drive.

Changing the language settings

1. To change the language settings of the Drive composer UI, go to **View** -> **Settings**.

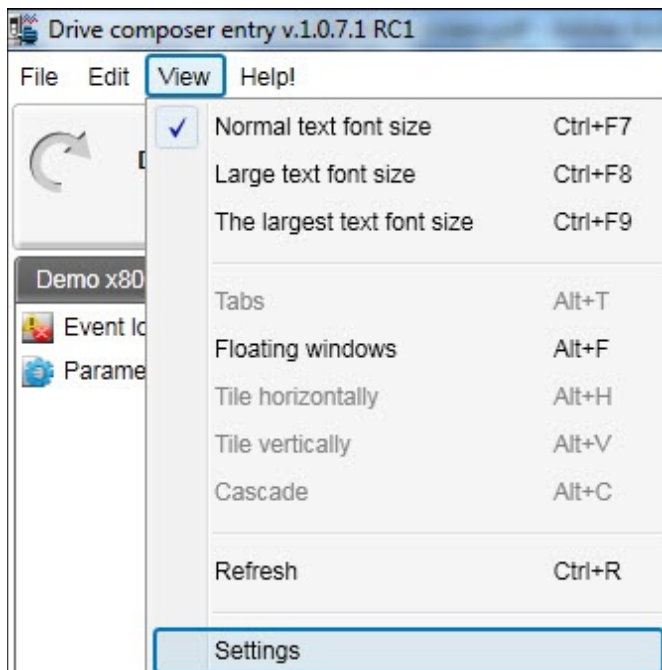


Figure 12. View-Settings

2. In the **Settings** window, choose the required language for the Drive composer UI.

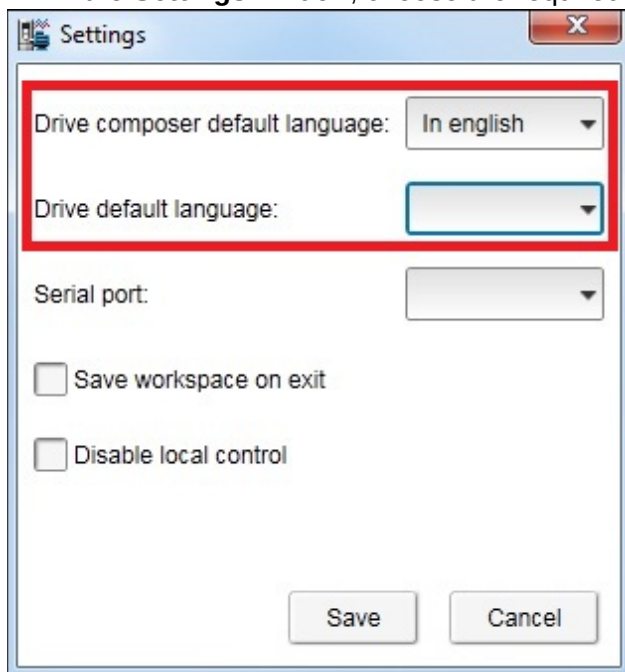


Figure 13. Language settings

- **Drive composer default language** to choose the default language of the menu or button text in Drive composer.
- **Drive default language** to choose the default language for parameters.

By changing language settings you can always use the same language when you connect Drive composer to the drive.

3. After changing the language settings click **View** → **Refresh (Ctrl + R)** or restart the Drive composer application.

Note: Some elements might require application restart to update the selected language.

Connecting to a drive via an Ethernet network

Ethernet network connection

There are ABB drives which have control boards with an embedded Ethernet port and ABB drives in which the Ethernet connection is made with the FENA-11 Ethernet adapter module. For the installation of the adapter module, see *FENA-01/-11 Ethernet adapter module user's manual* (3AUA0000093568 [English]).

Note: The PC/Ethernet Switch firewall must be configured to allow a connection for Drive composer pro (port http 80 and UDP) or the firewall must be disabled.

Creating an Ethernet network connection with Drive composer (pro)

1. Connect the FENA-11 to a drive.
2. Create a point-to-point connection from Assistant control panel or Drive composer to each drive.
3. If you use one adapter module with a drive, enable the FENA-11 by setting parameter *50.01 FBA A enable* to *Enable* and parameter *50.21 FBA A Timelevel sel* to *Fast* (or *Monitoring* for Tool network only).
4. If you use two fieldbus adapters with the drive and the FENA-11 has been installed as FBA B, enable the FENA-11 by setting parameters *50.31 FBA B enable* to *Enable* and *50.51 FBA B Timelevel sel* to *Fast* (or *Monitoring* for Tool network only).
5. Set a static IP address for each drive. See *FENA-01/-11 Ethernet adapter module user's manual* (3AUA0000093568 [English]).

51. FBA A settings						
1	FBA type	Ethernet	NoUnit			None
2	Protocol/Profile	MB/TCP ABB C	NoUnit			MB/TCP ABB C
3	Commrate	Auto	NoUnit			Auto
4	IP configuration	Static IP	NoUnit			Static IP
5	IP address 1	192	NoUnit	0	255	0
6	IP address 2	168	NoUnit	0	255	0
7	IP address 3	0	NoUnit	0	255	0
8	IP address 4	11	NoUnit	0	255	0
9	Subnet CIDR	24	NoUnit	0	32	0

Figure 14. IP settings of the drive with Drive composer

6. Refresh the settings with parameter *51.27 FBA par refresh*.

Note: Refreshing the Node setting will lose the communication to the drive. To re-establish the connection with the drive, select **View** -> **Refresh**.

7. Name each drive to facilitate the recognition of drives when creating an Ethernet network connection.

If you use Drive composer, name the drives on the System info tab by typing the name to the Drive name field and clicking **Set**.

ZCU12_1 {2}{1}	System info ZCU12_1 {2}{1} X
Drive name: ZCU12_1	Set 2/19/2013 10:13:48 PM
Products	

Figure 15. Naming a drive with Drive composer

Note: The drive name changes after the view has been refreshed. The previous names in other existing workspaces are not affected.

If you use Assistant control panel, name the drives through the Setting menu of the panel.

8. Configure the TCP/IP address of your PC. In this example the TCP/IP address is 192.168.0.1. For more information on configuring the TCP/IP address, see [Configuring the TCP/IP address with Windows XP](#) or [Configuring the TCP/IP address with Windows 7](#).

Configuring the TCP/IP address with Windows XP

1. Go to **Control panel** → **Network and Internet Connections** → **Network Connections**.
2. In the **Network Connections** window, double-click the required connection.

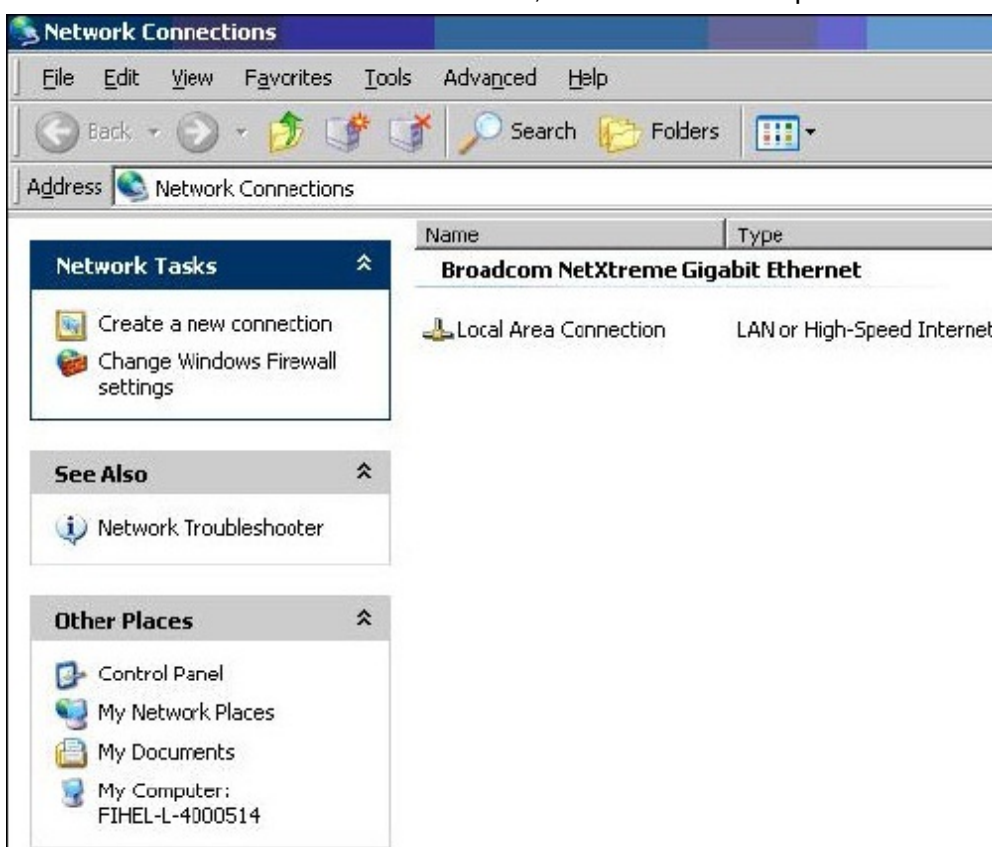


Figure 16. Network Connections window

- Click the **Properties** button. The Local Area Connection Status dialog box appears.

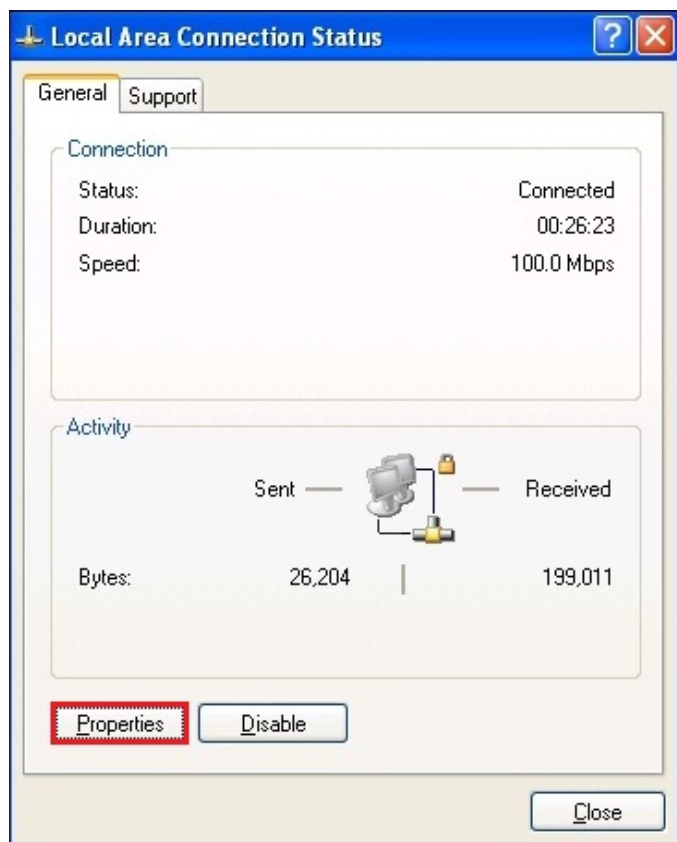


Figure 17. Local Area Connection Status dialog box

- Select **Internet Protocol (TCP/IP)** and click **Properties**.

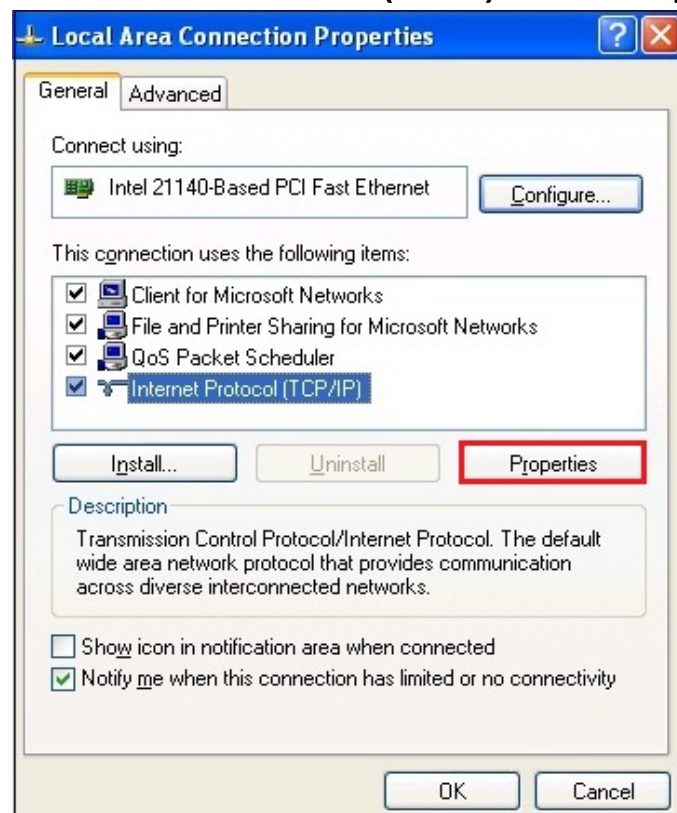


Figure 18. Local Area Connection Properties dialog box

5. Select **Use the following IP address** and type the IP address and the subnet mask. Click **OK**.

Internet Protocol (TCP/IP) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

☐ Obtain an IP address automatically

☒ Use the following IP address:

IP address: 10 . 0 . 0 . 1

Subnet mask: 255 . 0 . 0 . 0

Default gateway: . . .

☐ Obtain DNS server address automatically

☒ Use the following DNS server addresses:

Preferred DNS server: . . .

Alternate DNS server: . . .

Advanced...

OK Cancel

Figure 19. Use the following IP address option selected
TCP/IP address configuration is completed.

Configuring the TCP/IP address with Windows 7

1. Go to **Control Panel** and click **View network status and tasks**.

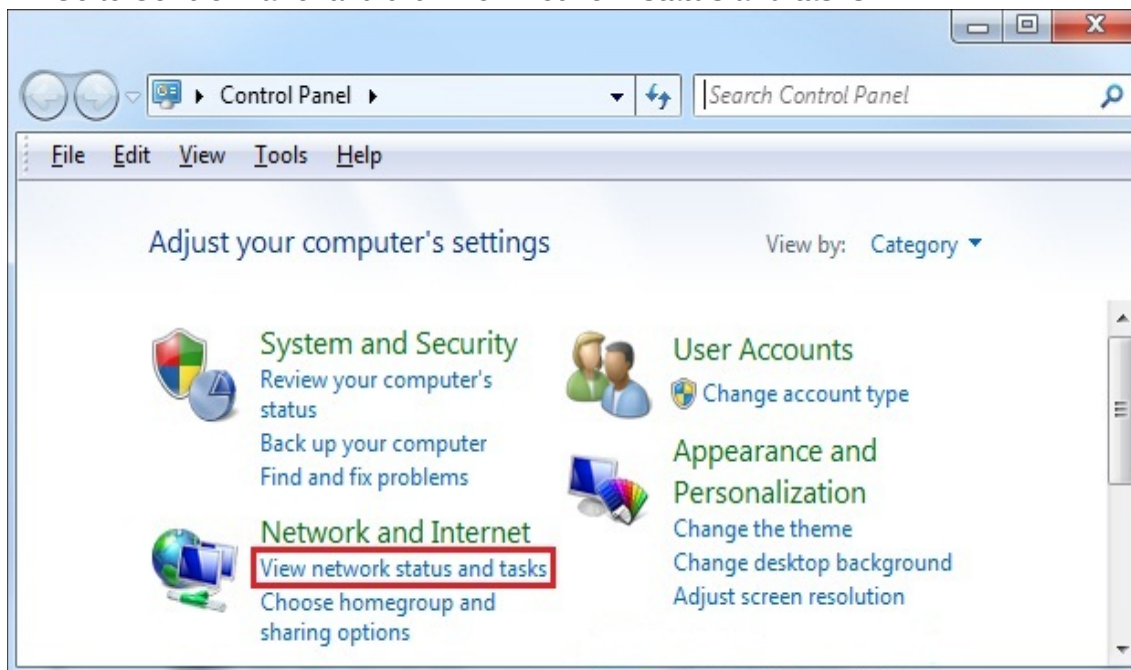


Figure 20. Win 7 Control Panel

2. Click **Change adapter settings** on the left pane. A Network connections window displays.

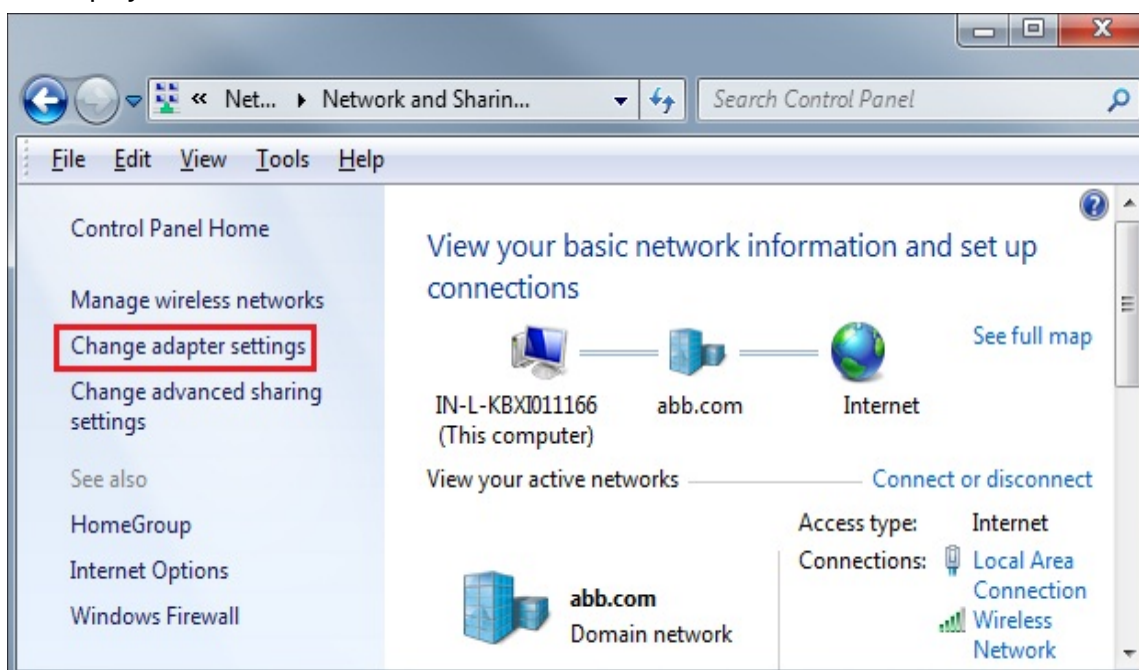


Figure 21. Network status and tasks

3. Double-click **Local Area Connection**.

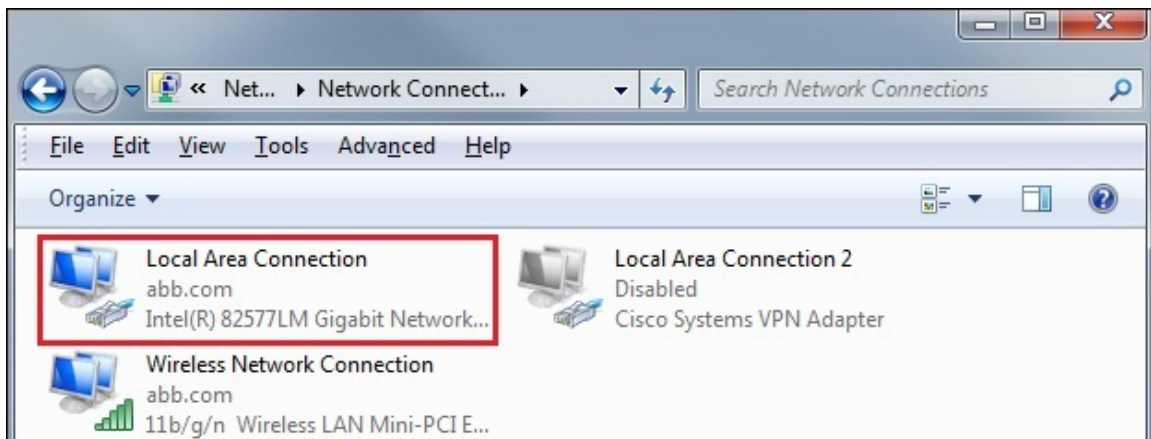


Figure 22. Local Area Connection

4. Click **Properties**.

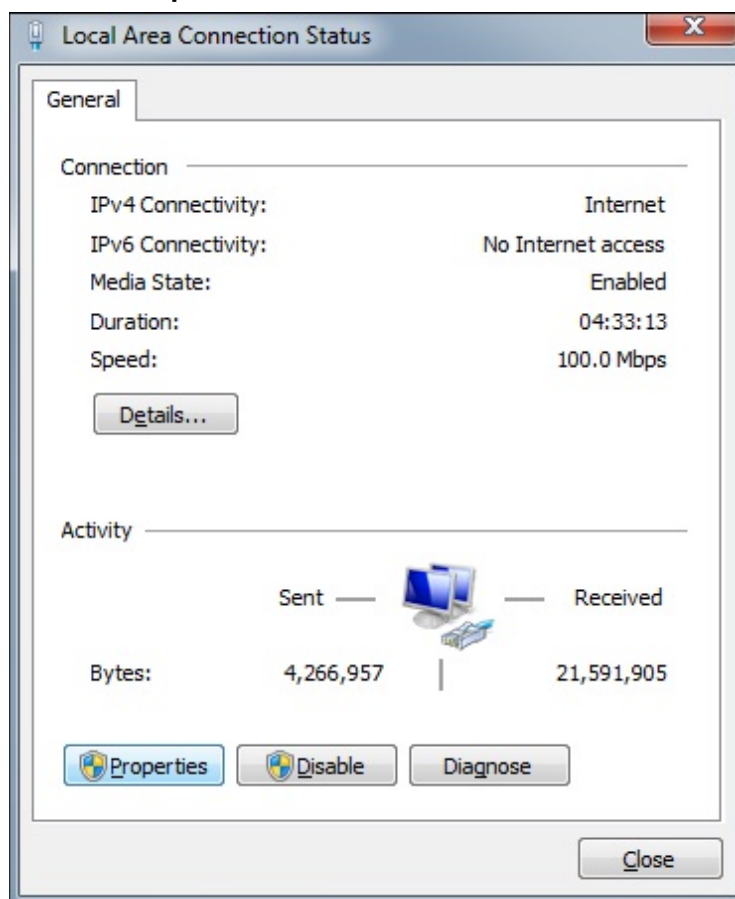


Figure 23. Local Area Connection Status dialog box

5. Select **Internet Protocol Version 4 (TCP/IPv4)** and click **OK**.

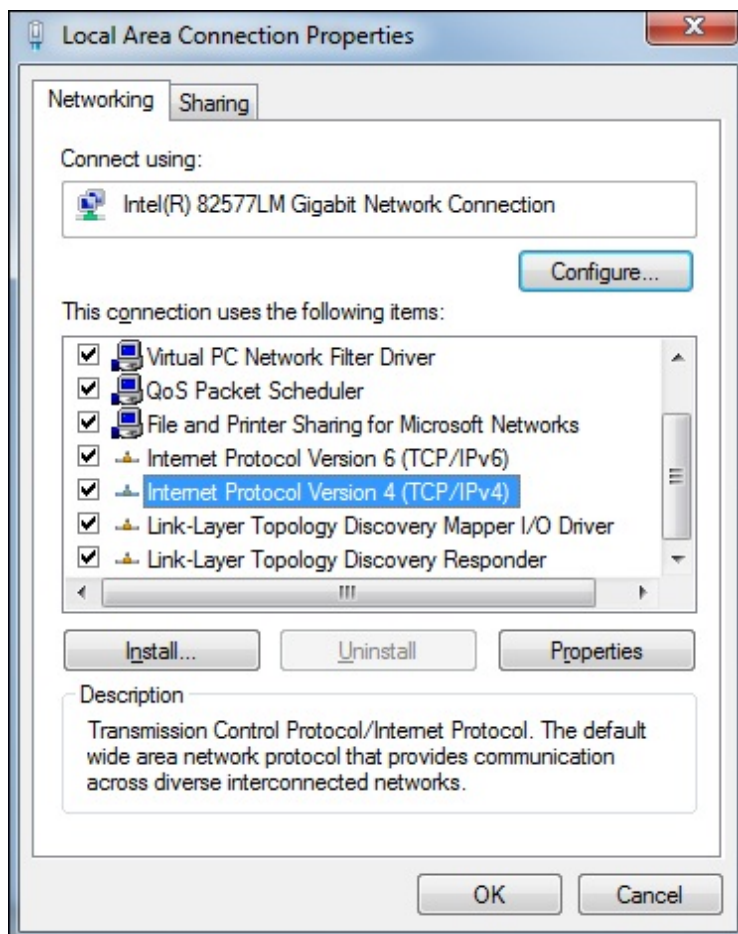


Figure 24. Local Area Connection Properties dialog box

6. Select **Use the following IP address**, type the IP address and subnet mask and click **OK**.

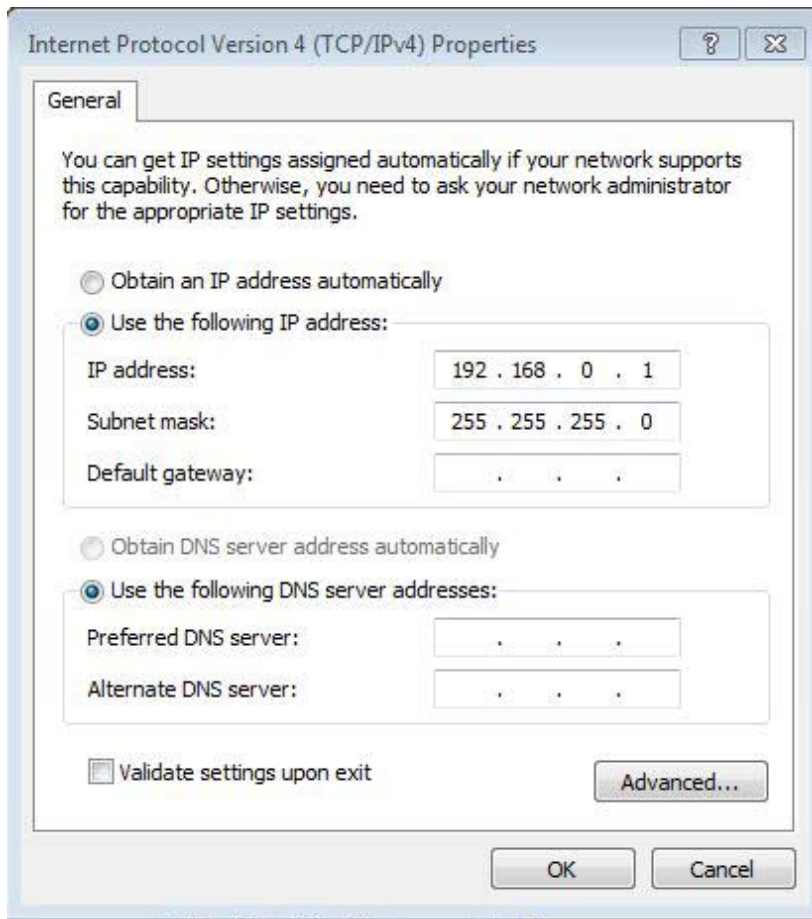
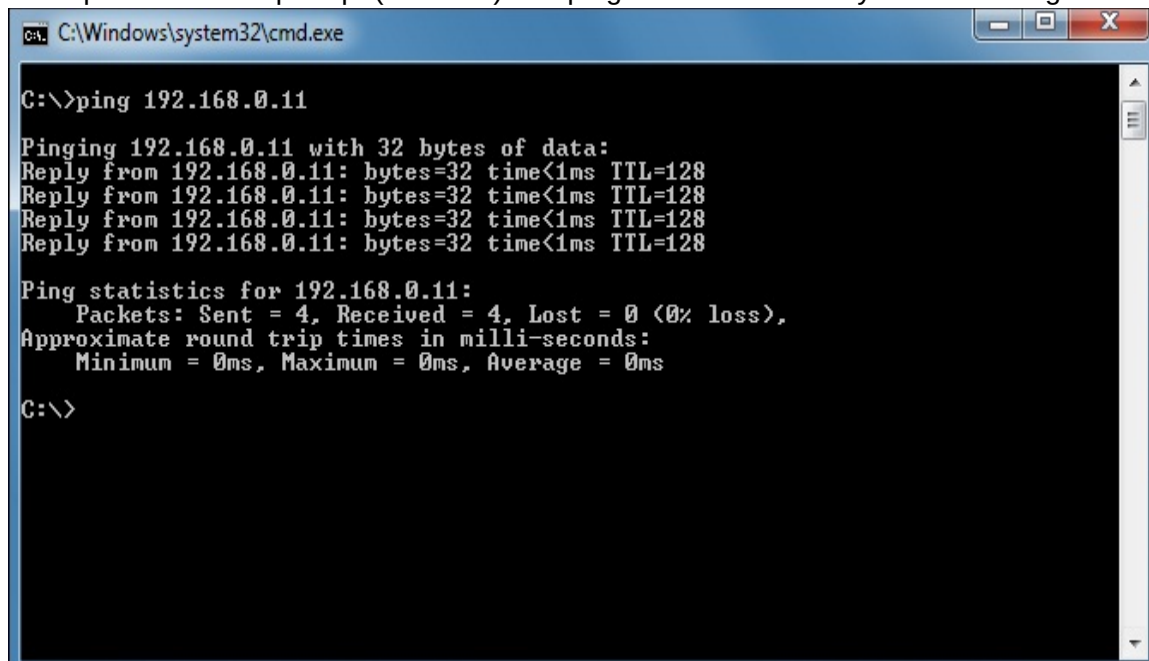


Figure 25. Selecting the IP address and subnet mask

7. Connect the RJ45 cable between the FENA-11 and the PC. Alternatively, connect all drives and the PC to the same Ethernet switch.

8. Open command prompt (cmd.exe) and ping all the drives that you have configured.

A screenshot of a Windows command prompt window. The title bar shows the path 'C:\Windows\system32\cmd.exe'. The command prompt shows the command 'C:\>ping 192.168.0.11' and its output. The output indicates a successful ping with 0% loss and 0ms round trip times.

```
C:\Windows\system32\cmd.exe

C:\>ping 192.168.0.11

Pinging 192.168.0.11 with 32 bytes of data:
Reply from 192.168.0.11: bytes=32 time<1ms TTL=128
Reply from 192.168.0.11: bytes=32 time<1ms TTL=128
Reply from 192.168.0.11: bytes=32 time<1ms TTL=128
Reply from 192.168.0.11: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.11:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

Figure 26. Pinging drives

Note: You must open http port 80 of the firewall on your PC to enable Drive composer pro to communicate with drives.

9. Open Drive composer pro.

Drive composer scans all COM ports and Ethernet ports to find drives.

If problems arise, see *Ethernet tool network for ACS880 drives application guide* (3AUA0000125635 [English]).

Connecting network drives (pro)

■ Panel bus network connection

ABB drives with an ACS-AP-x panel can be daisy-chained through the control panel ports as a network either for a PC tool or a panel bus connection.

Note: Some ABB drives control boards (for example, ZCU-13) do not have any daisy-chain connectors. For those drives, a panel bus connection can be created with FDPI-02 option modules. See *FDPI-02 diagnostics and panel interface user's manual* (3AUA0000113618 [English]) for more information.



Figure 27. Creating a panel bus

■ Creating a panel bus with Drive composer (pro)

1. Create a point-to-point connection from the Assistant control panel or Drive composer to each drive.
2. Set an independent node ID for each drive (with parameter *49.01 Node ID number*). The node ID must be between 1...32.
3. Refresh the settings (with parameter *49.06 Refresh settings*).

Note: Refreshing the Node setting will lose the communication to the drive. To re-establish the connection with the drive, select **View -> Refresh**.

4. With parameter *49.05 Communication loss action*, define how the drive reacts to a control panel (or PC tool) communication break by selecting **No action**.

49. Panel port communication						
1	Node ID number	5	NoUnit	1	32	1
3	Baud rate	230.4 kbps	NoUnit			230.4 kbps
4	Communication loss time	10.0	s	0.1	3000.0	10.0
5	Communication loss action	No action	NoUnit			Fault
6	Refresh settings	Done	NoUnit			Done

Figure 28. Panel port settings with Drive composer

5. Give a name for each drive to facilitate the recognition of drives when creating a panel bus connection.

If you use Drive composer, name the drives on the System info tab by entering the name to the Drive name field and clicking **Set**.



Figure 29. Naming a drive with Drive composer

Note: The drive name changes after the view has been refreshed. The previous names in other existing workspaces are not affected.

If you use Assistant control panel, name the drives through the Setting menu of the panel.

6. Remove all panels connected to drives.
7. To daisy-chain the drives connect a standard RJ45 (straight CAT5) cable to the left-hand side connector of the Assistant control panel in the first drive (the left-hand side drive in figure [Creating a panel bus](#) on page 41).
Note: Heavy-industry type RJ45 male connectors do not fit into the drive side female RJ45 slot
8. Connect a standard RJ45 (straight CAT5) cable from the right-hand side connector of the Assistant control panel in the first drive to the left-hand side connector of the Assistant control panel in the second drive.
9. Continue chaining the rest of the drives as described above.
10. If there is a long distance between the first and last drive in a panel bus, set the resistor to the ON position in the last node.

■ Connecting to the panel bus with Drive composer (pro)

1. Connect a USB cable between the Assistant control panel and your PC.
2. Double-click **Drive composer pro.exe** to launch Drive composer.
The status LED starts flickering on the Assistant control panel.
Note: It may take a long time before all drives are found.
Note: Drive composer does not open automatically any parameter window or other object.
3. Make sure you see all the drives in the Drive list.
Note: If you do not see all the drives, close the PC tool and try again. If you still do not see all drives, check Group 49 Panel port communication for the settings of the missing drives.
4. Select and click a drive from the Drive list.

Connection sharing (pro)

Select the option **Share connection with Control Builder Plus** to enable the simultaneous connection to the same drive from both applications.

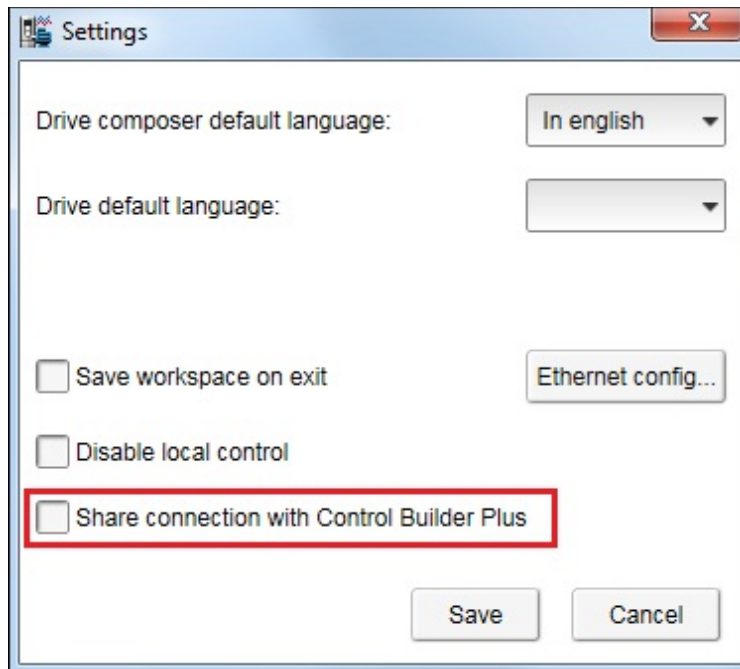


Figure 30. Connection sharing

5

Main user interface components

Contents of this chapter

This chapter describes the user interface (UI) components and how to use them.

Overview

The user interface consists of the following parts:

1. Title bar
2. Menu bar
3. Drive control panel
4. Drive list
5. Status panel (including the output view of the selected drive)
6. Working area for parameter windows, event logger, control diagrams, assistants etc.

The working area can be used either with tabs or floating windows. The figure below shows the user interface with tabbed windows.

The size of the drive list can be adjusted to the left/right. Similarly, the size of the working area can be adjusted by dragging the white separating line up/down. Most of the windows that are not maximized can be resized by dragging any corner. Scroll bars appear on the side or bottom of a window if it is possible to scroll the content.

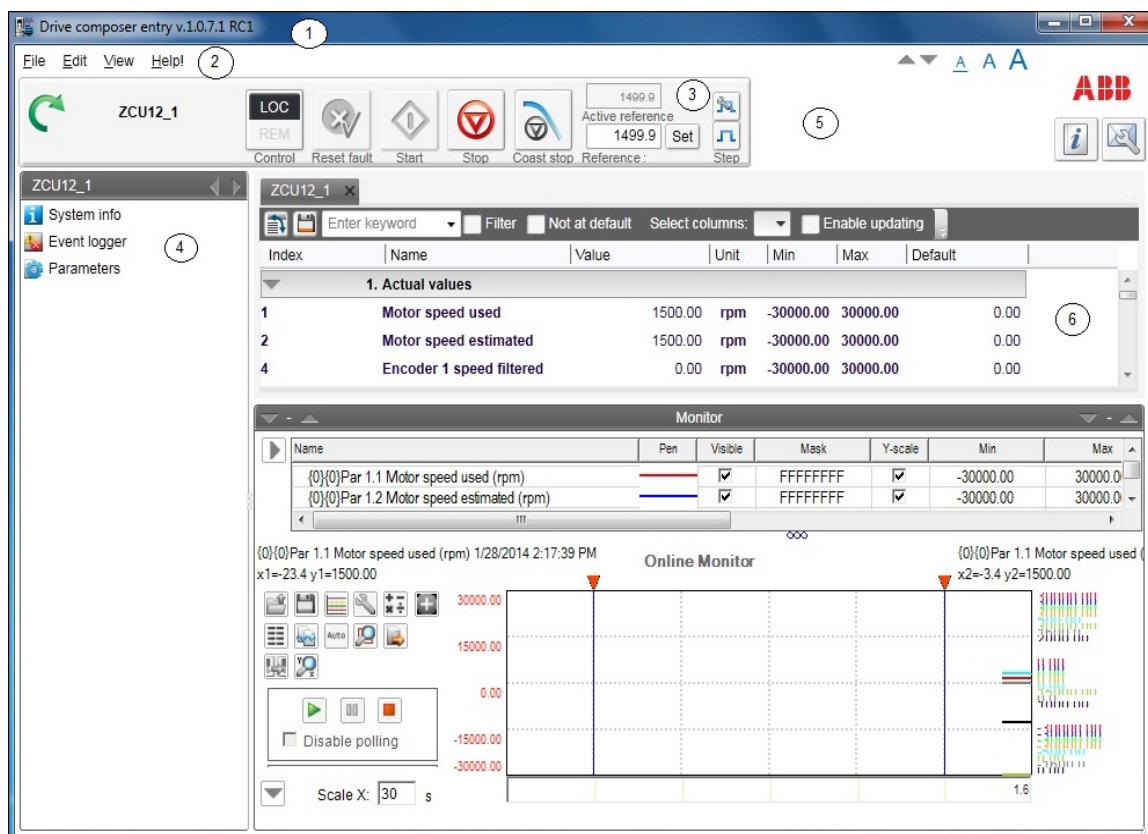


Figure 31. Overview of the user interface

Title bar

The title bar is located at the top of the main window. It consists of the following parts:

- System menu icon
- Application name and version number (Drive composer entry/pro)
- Name of the workspace (if there is an active workspace)
- Minimize button which has the same function as Minimize in the System menu
- Maximize/Restore Down button (the name depends on the status of the maximized window) which has the same function as Maximize or Restore in the System menu
- Close button which has the same function as Close in the System menu.

Note: When you close the application, system prompts to confirm. Click **Ok** to close the application.



Figure 32. Title bar

To reduce the main window to the taskbar or a sub-window to the bottom of the window area, click the **Minimize** button or go to **System menu** → **Minimize**.

To enlarge the window to fill the available space, click the **Maximize** button or go to **System menu** → **Maximize**.

To restore the window to the size and position it had before it was maximized, click **Restore Down** button or go to **System menu** → **Restore**.

You can also maximize or restore the window by double-clicking the title bar.

To move a window, drag the title bar. To move a dialog box, drag its title bar. If you have maximized or minimized a window, you cannot move it by dragging the title bar.

To end your Drive composer session, click the **Close** button. Before closing down, Drive composer may:

- warn you about releasing control of the drive if the drive is controlled locally by Drive composer
- prompt you to save the workspace with unsaved changes
- remind you to save your monitor data
- remind you of unfinished printing.

Note: If you disconnect cable from the drive *before* closing Drive composer there might be long delay in operation.

Note: To disable the function prompting you to save the workspace with unsaved changes, go to **View** → **Settings**.

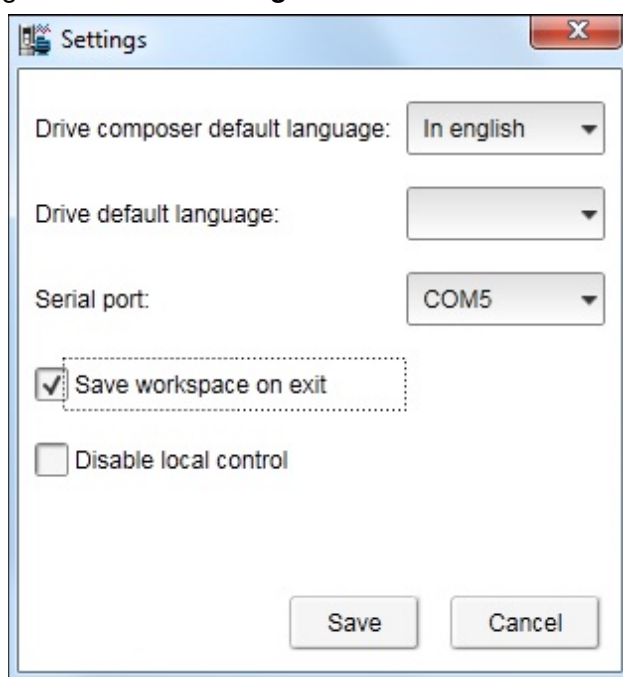


Figure 33. Save workspace on exit function

You can close Drive composer by

- double-clicking the **System menu** icon
- selecting **Close** in the System menu
- selecting **Exit** in the File menu
- pressing the shortcut key Alt+F4.

■ System menu

You can open the System menu by

- left or right-clicking the **System menu** icon
- pressing the shortcut key Alt+space bar
- right-clicking within the non-button area of the title bar.

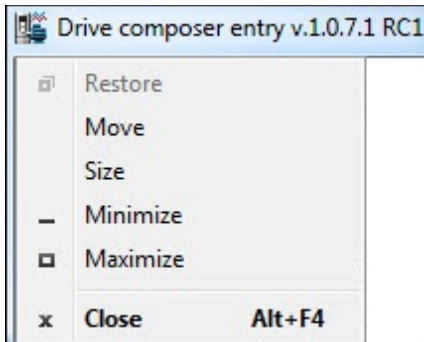


Figure 34. System menu

The System menu contains the following commands:

- **Restore** which has the same function as the **Maximize/Restore Down** button in the title bar when the window is maximized. The Restore command restores the window to its size and position which it had before it was maximized.
 - **Move** which can be performed also by dragging the title bar. After selecting the Move command from the System menu, it is possible to move the window with the arrow keys. To stop moving the window, press Enter. To cancel the move, press Esc.
 - **Size** which can be performed also by dragging any of the sides or corners of the window. After selecting the Size command, it is possible to resize the window with the arrow keys. To stop resizing the window, press Enter. To cancel resizing, press Esc.
 - **Minimize** which has the same function as the **Minimize** button in the title bar. The Minimize command reduces the window to the taskbar or to the bottom of the window area.
 - **Maximize** which has the same function as the **Maximize** button in the title bar when the window has not been maximized. The Maximize command enlarges the window to fill the available space.
 - **Close** which has the same function as the **Close** button in the title bar. The Close command ends the Drive composer session.
-

Menu bar

The menu bar is located below the title bar. It contains the following drop-down main menus:

- File
- Edit
- View
- Tools (pro)
- Help.

To execute a command from a menu, click its name on the menu. You can also use the arrow keys to navigate between the menus. To execute a highlighted command, press ENTER. To close a menu, press the ESC key. You can also use the shortcut keys to execute the commands.

■ File menu

The File menu is always located in the menu bar.

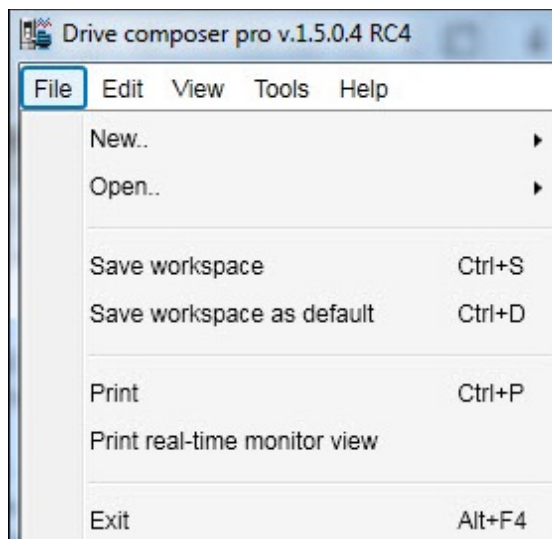


Figure 35. File menu

The File menu contains the following commands:

- **New..** opens a window where you can select a custom parameter set window. The keyboard shortcut for the custom parameter set command is Ctrl+N.

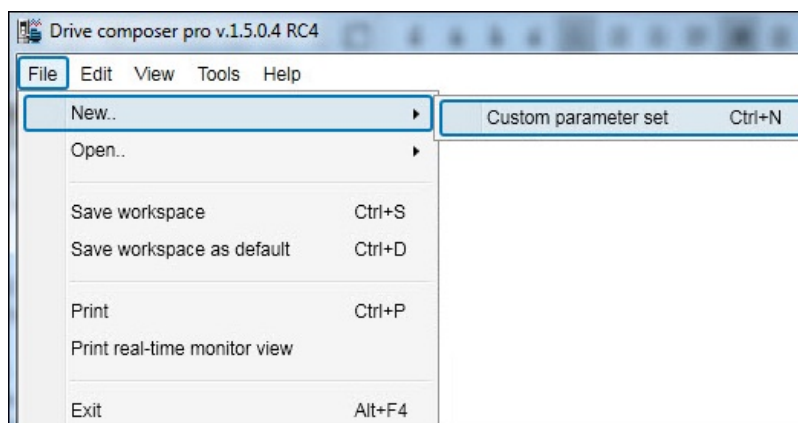


Figure 36. Custom parameter set

- **Open..** opens a new dialog.

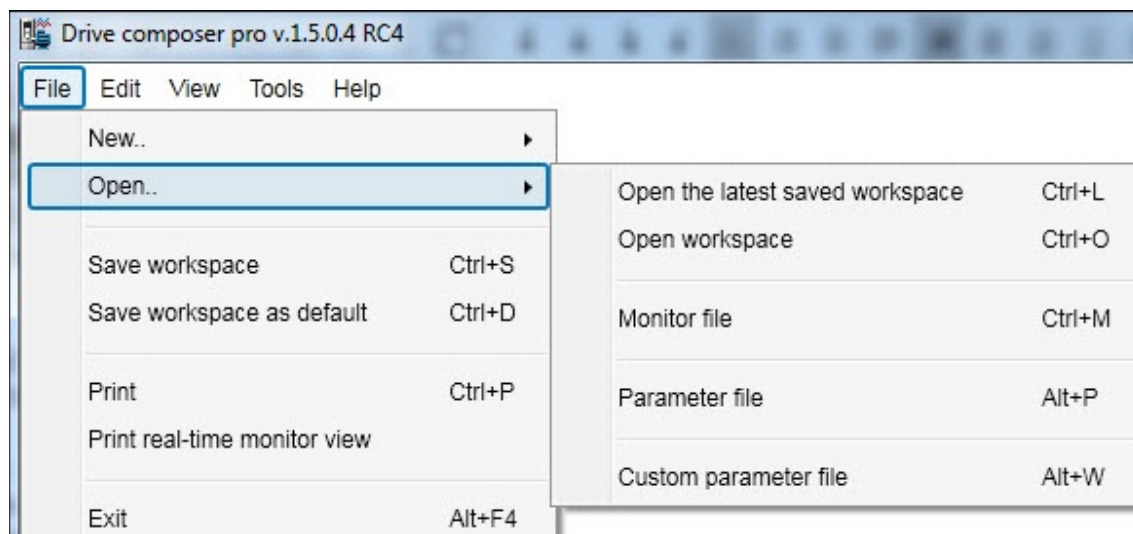


Figure 37. Open command

- **Open the latest saved workspace** opens the latest saved workspace. The keyboard shortcut for the open latest saved workspace command is Ctrl+L.
- **Open Workspace** opens a new window where you can select the saved workspace to be opened. The keyboard shortcut for the Workspace command is Ctrl+O.
- **Monitor file** opens a window to open the parameter file for monitoring.
- **Parameter file** opens a new window where you can select the saved parameter file to be opened. The keyboard shortcut for the Parameter file command is Alt+P.
- **Custom parameter file** opens a new window where you can open the saved custom parameter file. The keyboard shortcut for the Custom parameter file command is Alt+W.
- **Save workspace** saves the active workspace to a file. The keyboard shortcut for the Save workspace command is Ctrl+S.
- **Save workspace as default** saves the active workspace to default workspace. The default workspace opens automatically when Drive composer is opened. The keyboard shortcut for the Save workspace as default command is Ctrl+D.
- **Print** menu prints the parameter screen.
- **Print real-time monitor view (pro)** prints the monitor screen.
- **Exit** ends the Drive composer session.

■ Edit menu

The Edit menu is always located in the menu bar.

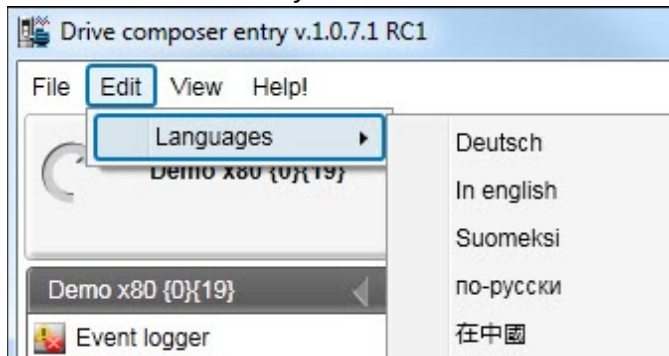


Figure 38. Edit menu

The menu contains the language commands with which you can select the language for the Drive composer user interface.

Note: Restart the Drive composer to see the language changes.

View menu

The View menu is always located in the menu bar.

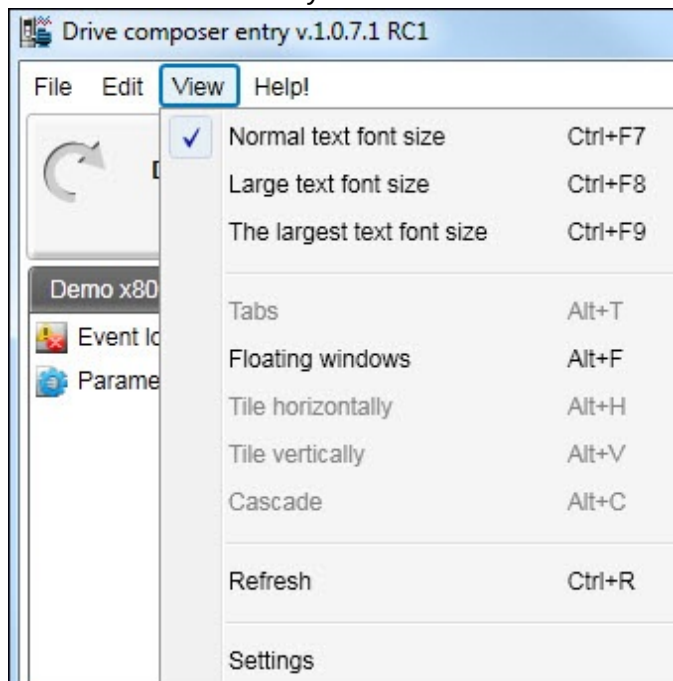


Figure 39. View menu

The View menu contains the following commands:

- **Normal text font size** for selecting the normal font size. The keyboard shortcut for Normal text font size is Ctrl+F6.
- **Large text font size** for selecting the larger font size. The keyboard shortcut for Large text font size is Ctrl+F7.
- **The largest text font size** for selecting the largest font size. The keyboard shortcut for the largest text font size is Ctrl+F8. The font sizes can also be changed with the following A-letter icons.



Figure 40. A-letter icons for changing the font size

- **Tabs** for changing the working area to be viewed as tabs. The keyboard shortcut for Tabs is Alt+T.
- **Floating windows** for changing the working area in a separate window. The keyboard shortcut for Floating windows is Alt+F.
- **Tile horizontally** for changing floating windows to be tiled horizontally. The keyboard shortcut for Tile horizontally is Alt+H.
- **Tile vertically** for changing floating windows to vertical. The keyboard shortcut for Tile vertically is Alt+V.

- **Cascade** for changing floating windows to cascade. The keyboard shortcut for Cascade is Alt+C. The cascaded windows can be resized and freely located in the working area.
- **Refresh** for creating a new connection to the drive (uploads parameter information from a single drive and creates a new connection with multidrives). The keyboard shortcut for Refresh is Ctrl+R.
- **Settings** for defining language, connection configuration, workspace settings, local control disable and temporary files location.

■ Tools menu (pro)

The Tools menu is located in the menu bar. The commands of the Tools menu vary between SW versions and drives.

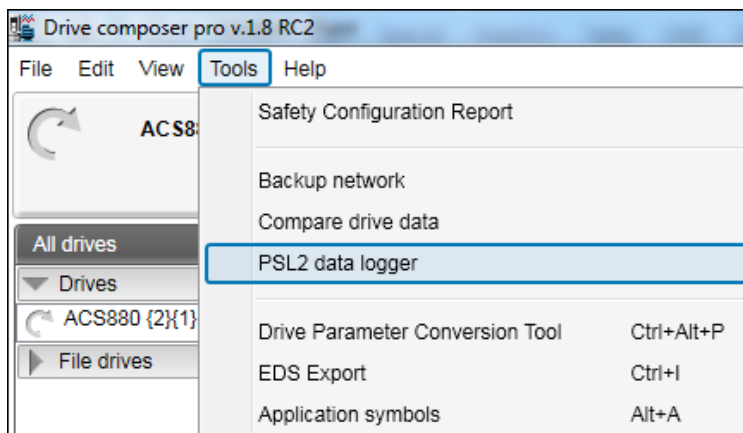


Figure 41. Tools menu

The menu contains the following commands:

- **Safety Configuration Report** for printing the safety functions configuration report with FSO-12 installed. This option is available only in Drive Composer version 1.7 and later.
- **Backup network** for creating backup of all connected drives in a PC tool network. The keyboard shortcut for Backup network is Ctrl+ B.
- **Compare drive data** for comparing parameters of two drives or a parameter file and a drive or two parameter files. The keyboard shortcut for Compare drive data is Alt+C.
- **PSL2 data logger** for uploading PSL2 data logger files from the drive flash memory to PC local hard drive. This option is applicable only in BCU-x2 control unit.
- **Drive Parameter Conversion Tool** to convert the parameters.
- **EDS Export** for creating the EDS files of a connected drive. The keyboard shortcut for EDS Export is Ctrl+I.
- **Application symbols** for showing the symbols exported from Control Builder Plus application for the drive. If the drive does not have Control Builder Plus, the application list remains empty. The keyboard shortcut for showing the application symbols is Ctrl+A.

■ Help menu

The Help menu is always located in the menu bar.

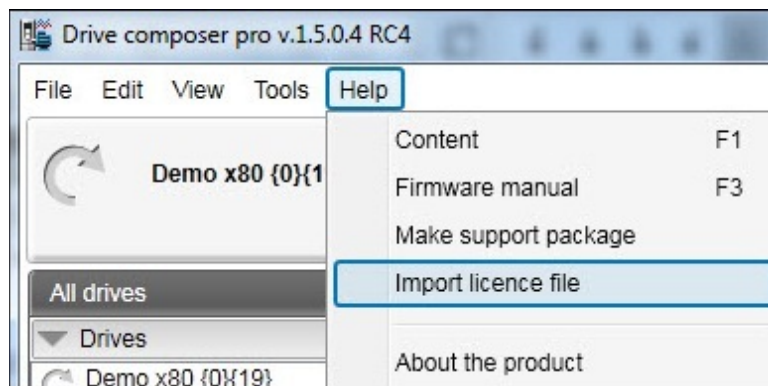


Figure 42. Help menu

The Help menu contains the following commands:

- **Content** or the F1 key opens the Drive composer user manual as a PDF file.
- **Firmware manual** or the F3 key opens the firmware manual of the drive in a separate window as a PDF file. If you have selected a parameter or some other significant item when you click this command or press the F3 key, the appropriate chapter in the firmware manual is displayed.
- **Make support package** function creates a single file, that can be sent to local ABB support contact in case of any need for support.
- **Import licence file (pro)** function displays the Product activation window. Enter the activation key and click Activate.
- **About the product** opens a window displaying the program information, version number and copyright text.

Drive control panel

The drive control panel is located below the menu bar. It has buttons for controlling a connected drive. It also shows the status of the drive.



Figure 43. Drive control panel

The drive control panel contains the following buttons and items:

- Name and node number of the currently controlled drive and an indication if it is running. See below for status icons explanations.
- **Control** button controls the selected drive with Drive composer or releasing the control of the drive.
- **Reset fault** button sends a reset command to the drive. If the fault is no longer active, the drive clears it.
- **Start** button starts the currently controlled drive. A motor connected to the drive starts rotating according to the set reference value.
- **Stop** button stops the rotation of the motor connected to the currently controlled drive.
- **Coast stop** button.
- **Reference** value field enables entering a new reference value. When you click the Reference field, a tooltip tells you max and min limits for the reference and current reference value.
- Reference field shows the reference used in the drive. The reverse direction is set manually with the - sign.
- **Set** button enforces the value in the reference value field to the currently controlled drive. The same command can be performed by pressing Enter.
- **Active reference** displays the reference value.
- **Step configuration** cycle button enables to modify Step type, Step value and Step duration with reference value. The available configuration is dependent on the connected drive.
- **Step** functionality activates the step cycle with the reference value.

■ Drive list panel

The drive list panel shows all connected drives and open files. Drives are indicated with a motor icon (clockwise open circle arrow).

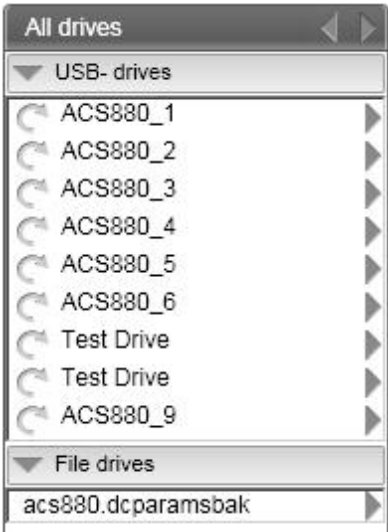


Figure 44. Drive list panel in Drive composer pro

A grey circle arrow indicates a stopped drive.



Figure 45. Stopped drive

A green circle arrow indicates a running drive.

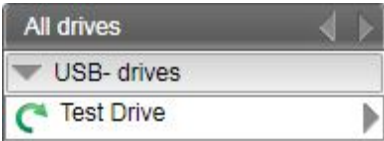


Figure 46. Running drive

A red circle with a white cross (x) indicates a faulty drive.

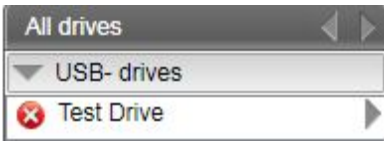


Figure 47. Faulty drive

An orange background means that a drive that has an alarm.



Figure 48. Drive with an alarm

A red broken line (—/ /—) means that the connection to a drive has broken.



Figure 49. Drive with a broken connection

The views for a drive – parameter window, data logger, event logger, system info, assistants (if such are available for the drive), control diagrams (if such are available for the drive) – can be seen by clicking with the primary mouse button and selecting the corresponding icons from the pop-up window.

You can open those views either as new tabs or floating windows. If an active window is associated with a drive or a file, the corresponding tree item is highlighted in the drive list.

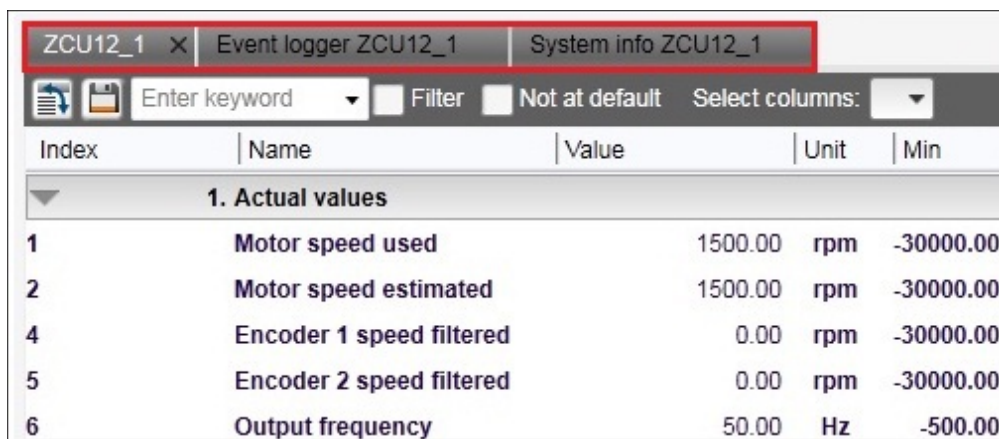
■ Using the drive control panel for starting the drive

1. See the firmware manual of the drive for parameters you must set before starting.
2. Click the **Control** button.
The control box indicator changes to LOC.
3. Enter a reference value and press Enter or click the **Set** button.
4. Click **Start**.
The drive starts. The indicator box arrow changes to green.

Note: Limit settings in group 30 affect reference limits.

Working area

Parameter windows, custom parameter windows, event logger, system info, control diagrams, assistants etc. are shown in the working area. The user interface is tabbed by default. You can change the order of tabs by dragging them. You can open tabs for a single drive or for multiple drives.



Index	Name	Value	Unit	Min
1. Actual values				
1	Motor speed used	1500.00	rpm	-30000.00
2	Motor speed estimated	1500.00	rpm	-30000.00
4	Encoder 1 speed filtered	0.00	rpm	-30000.00
5	Encoder 2 speed filtered	0.00	rpm	-30000.00
6	Output frequency	50.00	Hz	-500.00

Figure 50. Tabbed user interface

The working area can be set to a floating window. For example, parameter window, event logger, system info etc. are shown as floating windows. The floating windows can be tiled vertically or horizontally or cascaded by using the commands in the **View** menu.

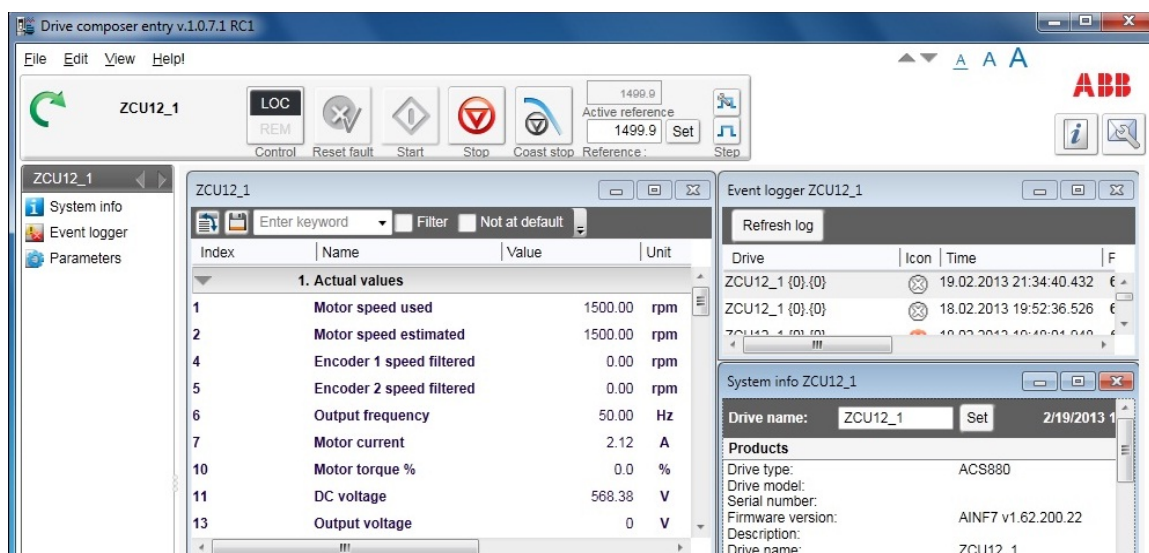


Figure 51. Floating windows

6

Parameter window

Contents of this chapter

This chapter describes the parameter and custom parameter windows.

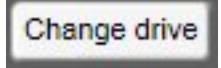
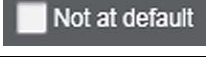
Parameter window

With Drive composer entry the parameter window is always opened when you make connection to a drive. With Drive composer pro the parameter window is opened by clicking on the selected drive in the drive list and selecting **Parameters**.

The parameter window view displays parameter groups, parameters and their values for the associated drive or a file. There can be several parameter windows in the working area. The headline of each parameter window shows which drive it belongs to.

Following are the command icons available in the parameter window.

Icon	Description
	Expands/collapses parameter groups. When parameter groups are expanded, all parameter values are read once from the drive.
	Saves parameters to a file. Saves visible parameters to a file. File extension is dcparms(bak).
	Enables you to search parameter lists with a keyword. Search is activated/deactivated by clicking the Filter check box. When the Filter check box is unchecked all parameters are seen. Note: If parameter groups have not been expanded, the first search takes about 30...60 seconds.
	Allows you to select/deselect columns to be seen in a parameter window.

Icon	Description
	Parameters are updated only when a group is opened. With the Enable updating function it is possible to set all open and visible groups to be updated automatically. Parameters that have been set to be updated automatically have a yellow background.
	Allows you to download parameters from a file to a drive. With a custom parameter window allows downloading offline values to a drive.
	Enables you to change the window target, which is useful if you have Drive composer pro and you have to check certain parameters of another drive. Included only in custom parameter windows.
	Provides you with a list of all user-changed parameters if you click the check box. These parameters have an orange background.
	Allows you to add or remove one parameter or signal or several parameters or signals to/from a custom parameter window.

ZCU12_1 {2X1}						
  Enter keyword ☐ Filter ☐ Not at default Select columns: ☐ Enable updating 						
Index	Name	Value	Unit	Min	Max	Default
1. Actual values						
1	Motor speed used	0.00	rpm	-30000.00	30000.00	0.00
2	Motor speed estimated	0.00	rpm	-30000.00	30000.00	0.00
4	Encoder 1 speed filtered	0.00	rpm	-30000.00	30000.00	0.00
5	Encoder 2 speed filtered	0.00	rpm	-30000.00	30000.00	0.00
6	Output frequency	0.00	Hz	-500.00	500.00	0.00
7	Motor current	0.00	A	0.00	30000.00	0.00
10	Motor torque %	0.0	%	-1600.0	1600.0	0.0
3. Input references						
4. Warnings and faults						
5. Diagnostics						
6. Control and status words						
7. System info						
10. Standard DI, RO						
1	DI status	0b1000 0000 0000	NoUnit	0b0000 0b1111 11'		0b0000
2	DI delayed status	0b1000 0000 0000	NoUnit	0b0000 0b1111 11'		0b0000
3	DI force selection	0b0000	NoUnit	0b0000 0b1111 11'		0b0000
4	DI force data	0b0000	NoUnit	0b0000 0b1111 11'		0b0000
5	DI1 ON delay	5.0	s	0.0	3000.0	0.0
6	DI1 OFF delay	0.0	s	0.0	3000.0	0.0
7	DI2 ON delay	0.0	s	0.0	3000.0	0.0
8	DI2 OFF delay	10.0	s	0.0	3000.0	0.0
9	DI3 ON delay	0.0	s	0.0	3000.0	0.0
10	DI3 OFF delay	0.0	s	0.0	3000.0	0.0

Figure 52. Parameter window

The parameter window contains different types of parameters. Some of these types are identified by colors or bold fonts as shown in the table below:

Icon/Example	Explanation
Regular	Normal parameters
1.1 Motor speed	Signals (bold, magenta)
1 DI status 	Bit names of a parameter can be seen by double-clicking on the parameter (bold). New window opens.
P2.1.1 P2.1.2-	Parameter value is set from another parameter, for example, parameter group 2, index 1, bit 1. Parameter value is an inverted bit of another parameter, group 2, index 1, bit 2.
28 AI2 max 	User has changed the value of a parameter (shown with an orange background).

The most common type is the regular parameter. Parameters are normally readable and writable. However, when the drive is running, some parameters may be write-protected.

Parameter names, values, units, default values and different user sets are shown in the parameter window. The number of user sets depends on the drive type.

The value of a parameter is read only once. If you want to update this value, right-click and select **Refresh the parameter**. You can set all visible parameters to update automatically by clicking the **Enable updating** button.

The values of signals cannot be modified. If signals are modified, you will get an error prompt for every signal. Signals are updated cyclically in the parameter window. Parameter signals are also updated frequently, but their values can be modified.

Navigating parameters and groups

Parameter values are updated if they are modified. A parameter value can be modified by double-clicking the parameter or by pressing Enter on a highlighted parameter. To update parameter group values, right-click the group name and select **Refresh group parameters**.

In special cases, hidden parameters and groups become available by modifying some parameter values, the **View → Refresh** command updates the whole parameter table. An example for such a group is group *51 FBA A Settings*: When the adapter module has been enabled in group 50, the parameter names can be seen by selecting **View → Refresh**.

Note: The parameter window must be closed before refreshing and opened again after refreshing.

There are five alternative formats in which parameters are shown: default, binary, hexadecimal, integer and float format. To change the format of a parameter, right-click and select either **Use default format**, **Use binary format**, **Use hexadecimal format**, **Use integer format** or **Use float format**.

You can change the widths of the columns by dragging the vertical lines between the column headers.

Double-click the value field box to see the bit names of certain binary parameters. For example, see the below parameter 10.1 DI status.

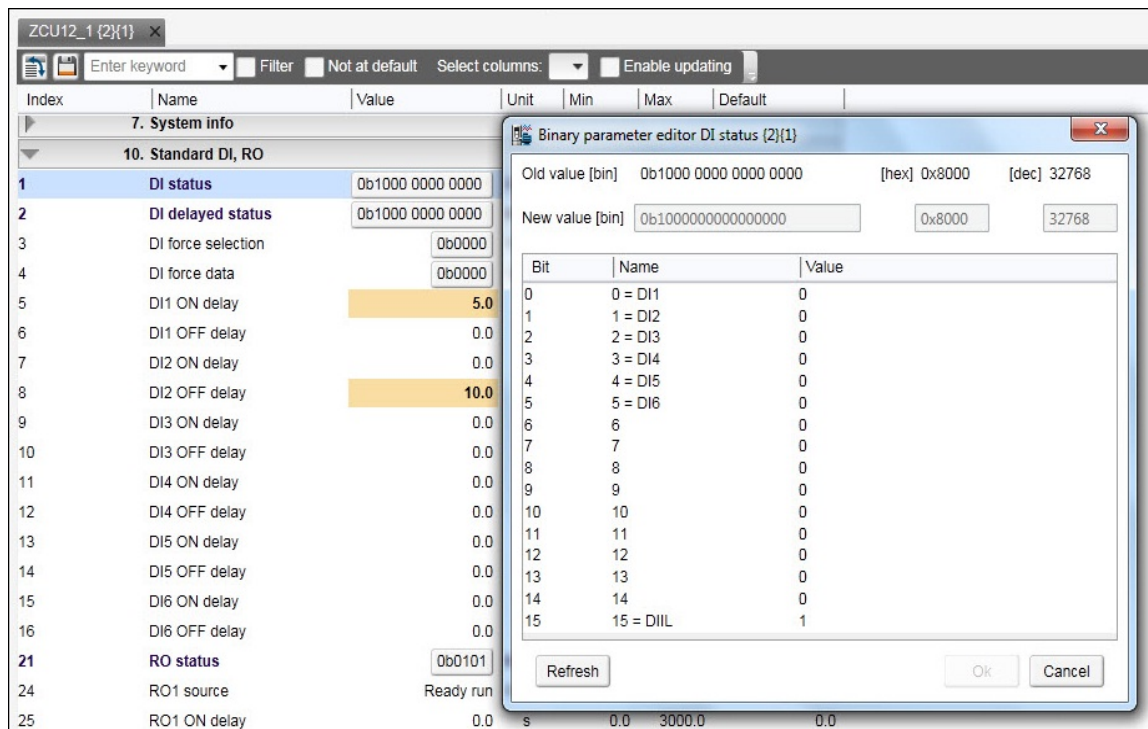


Figure 53. Bit names for a parameter

To reset a parameter, right-click it and select **Reset to default**.

Parameter values are read once when a group is opened. Independent parameters from different groups can be set to the Auto-update mode by right-clicking them and selecting **Add to auto-update**. The parameters that are updated automatically are seen with a yellow background as shown in the following figure.

Note: Signals are automatically updated cyclically

ZCU12_1 {2X1} X						
Enter keyword Filter Not at default Select columns: Enable updating						
Index	Name	Value	Unit	Min	Max	Default
19. Operation mode						
1	Actual operation mode	Speed	NoUnit			Speed
11	Ext1/Ext2 selection	EXT1	NoUnit			EXT1
12	Ext1 control mode	Speed	NoUnit			Speed
14	Ext2 control mode	Speed	NoUnit			Speed
16	Local control mode	Speed	NoUnit			Speed
17	Local control disable	No	NoUnit			No
20	Scalar control reference unit	Rpm	NoUnit			Rpm
20. Start/stop/direction						
21. Start/stop mode						
22. Speed reference selection						
23. Speed reference ramp						
24. Speed reference conditionii						
25. Speed control						
26. Torque reference chain						
28. Frequency reference chain						

Figure 54. Parameters with a yellow background

Parameters or signals can be sent to the monitor window by right-clicking them and selecting **Send to monitor**. Parameters can be copied to a custom parameter window by right-clicking them and selecting **Copy**. In addition, you can drag and drop parameters to a custom parameter window.

Pointer parameters

One special type of a parameter is a pointer parameter. The value of a pointer parameter is read from the parameter it points to. Depending on the pointer parameter, value or bit pointer, its target can be another parameter or one of its bits. Some pointer parameters can be assigned Active (false) or Inactive (true).

In most cases, common settings are offered as a selection list. In those cases where the selection list does not offer the correct pointer, pointing can be done by selecting **Other...** from a selection list.

21. Start/stop mode			
1	Start mode	Automatic	NoUnit
2	Magnetization time	500	ms
3	Stop mode	Coast	NoUnit
4	Emergency stop mode	Ramp stop (Off1)	NoUnit
5	Emergency stop source	▼ NoUnit	
6	Zero speed limit	Other...	
7	Zero speed delay	Active (false)	
8	DC current control	Inactive (true)	
9	DC hold speed	DI1L	t
10	DC current reference	DI1	
11	Post magnetization time	DI2	
13	Autophasing mode	DI3	
		DI4	
		DI5	
		DI6	
		DIO1	t
		DIO2	

Figure 55. Constant value for a pointer parameter

Select a parameter from the list for a value pointer and then its bit from 0 to 31 for a bit pointer.

You can also enter a value manually by selecting the Edit manually check box. The value must follow form P.#.#.#, where the first # is the parameter group number, the second # is the parameter number and the third # is the bit number without leading zeros (for example P.2.1.2).

Active (false) or Inactive (true) are the constant values that can be entered manually.

A bit pointer value can also be inverted by selecting the Invert value check box.

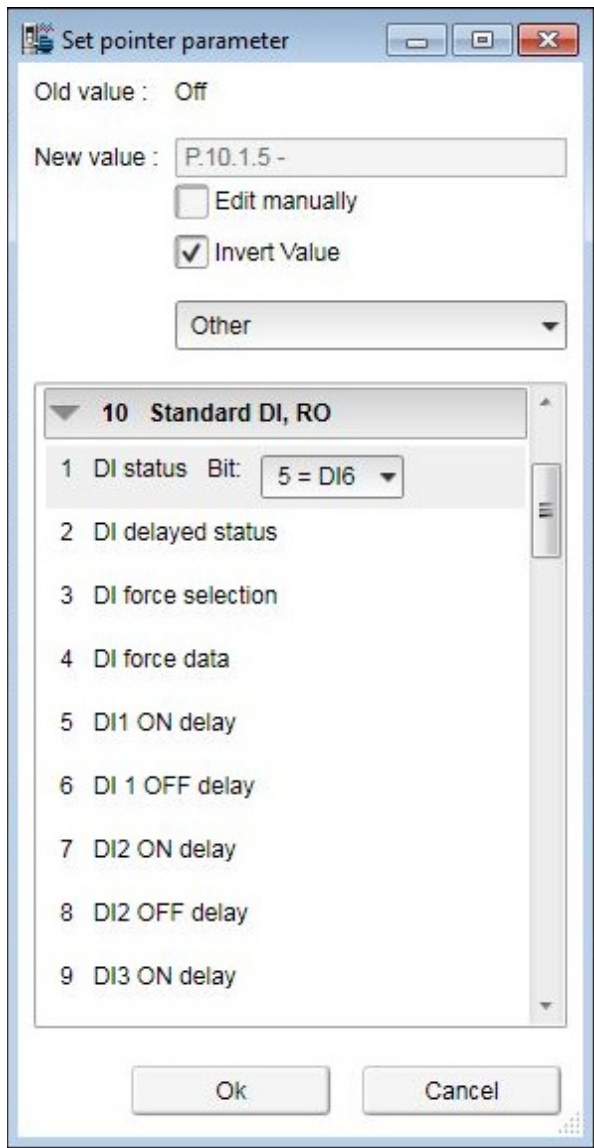


Figure 56. Inverting a bit pointer value

The inverted bit pointer value is shown with the minus sign at the end of the parameter.

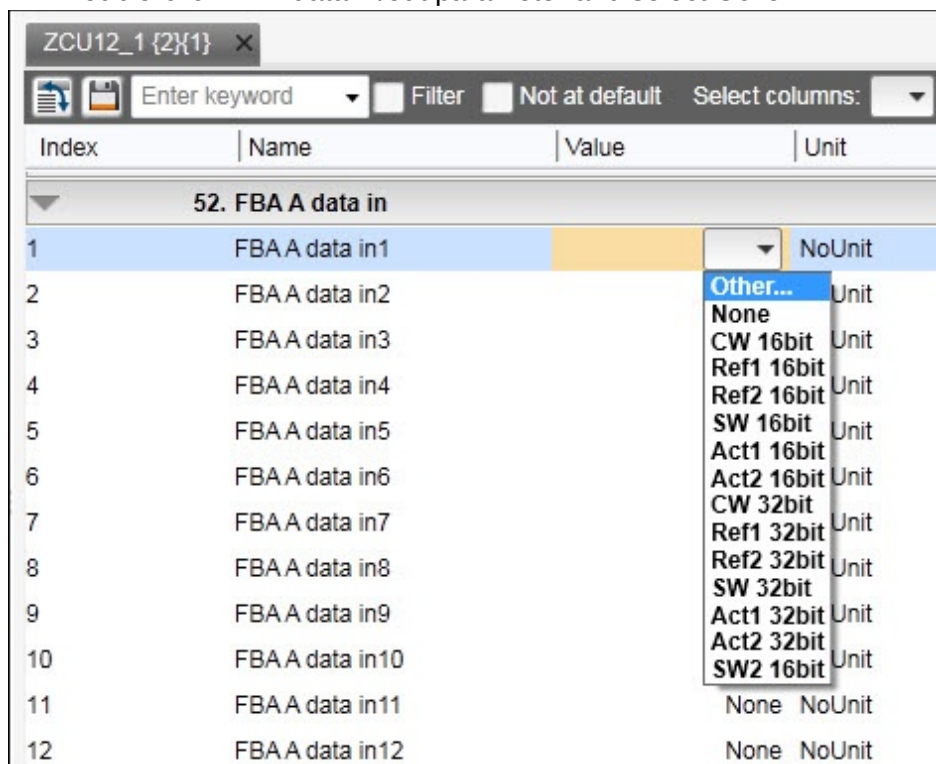
20. Start/stop/direction				
1	Ext1 commands	In1 Start; In2 Dir	NoUnit	In1 Start; In2 Dir
2	Ext1 start trigger	Edge	NoUnit	Edge
3	Ext1 in1	P.10.1.5 -	NoUnit	DI1

Figure 57. Inverted bit pointer value with the minus sign

■ Setting fieldbus data in/out parameters

Process data transferred to and from the drive/PLC is set with parameter groups 52 and 53. With an ACS880 drive it is possible to select the data type for each selected parameter/signal in these group.

1. Double-click FBA A data in/out parameter and select **Other**.



Index	Name	Value	Unit
52. FBA A data in			
1	FBA A data in1		NoUnit
2	FBA A data in2		Unit
3	FBA A data in3		Unit
4	FBA A data in4		Unit
5	FBA A data in5		Unit
6	FBA A data in6		Unit
7	FBA A data in7		Unit
8	FBA A data in8		Unit
9	FBA A data in9		Unit
10	FBA A data in10		Unit
11	FBA A data in11		NoUnit
12	FBA A data in12		NoUnit

Figure 58. Selecting the data type

2. Select the format in which the value is handled: 16-bit, 32-bit or floating point format.

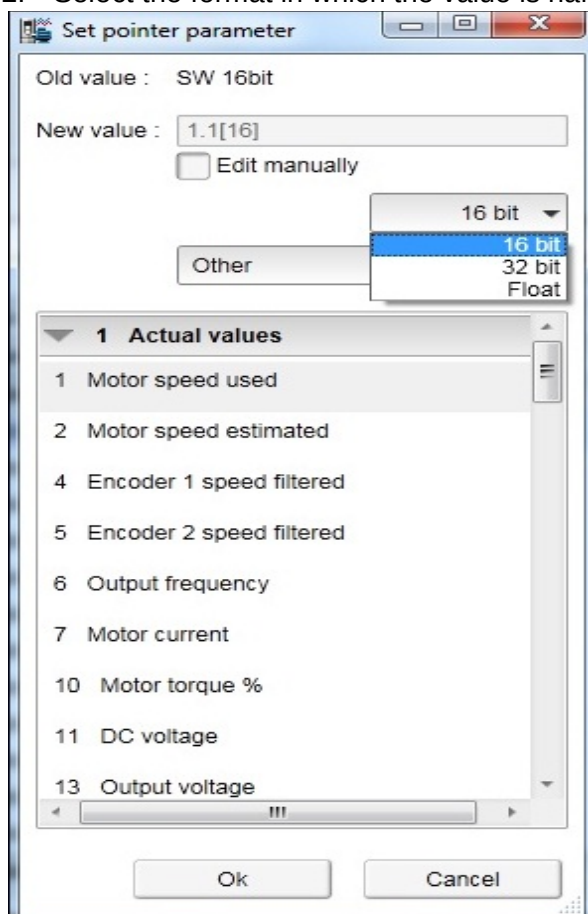


Figure 59. Selecting the format

In the parameter window the selections are shown inside brackets: [16], [32] or [F].

52. FBA A data in			
1	FBA A data in1	1.1[16]	NoUnit
2	FBA A data in2	1.11[16]	NoUnit
3	FBA A data in3	1.7[16]	NoUnit
4	FBA A data in4	None	NoUnit
5	FBA A data in5	1.4[16]	NoUnit

Figure 60. Formats shown inside brackets in the parameter window

Note: The floating point or 32-bit value reserves 2 slots in the configuration. Consequently, if you try to select a value for parameter 52.04 as in the figure above, you get a Parwrite failed error message. The scalings of parameters/signals are found in ACS880 *primary control program firmware manual* (AUA0000085967 [English]).

Note: You should always check the parameter mapping from the manual of the used fieldbus protocol. Example, FENA-01/-11/-21 Ethernet adapter module user's manual (3AUA0000093568 [English]) or FPBA-01 PROFIBUS DP adapter module user's manual (3AFE68573271 [English]).

Binary parameters

Binary parameters have a special meaning for each of their bits. These parameters are modified in a special Set binary parameter dialog. The value can be modified numerically in binary, hexadecimal or decimal format.

You can modify the values in the bit by double-clicking the value field for each bit. Some bits are greyed out and disable to edit.

Another way to modify a bit is to type the bit value directly to the New value [bin] / [hex] / [dec] field.

Signal values, which are in binary format, can be viewed in a similar dialog.

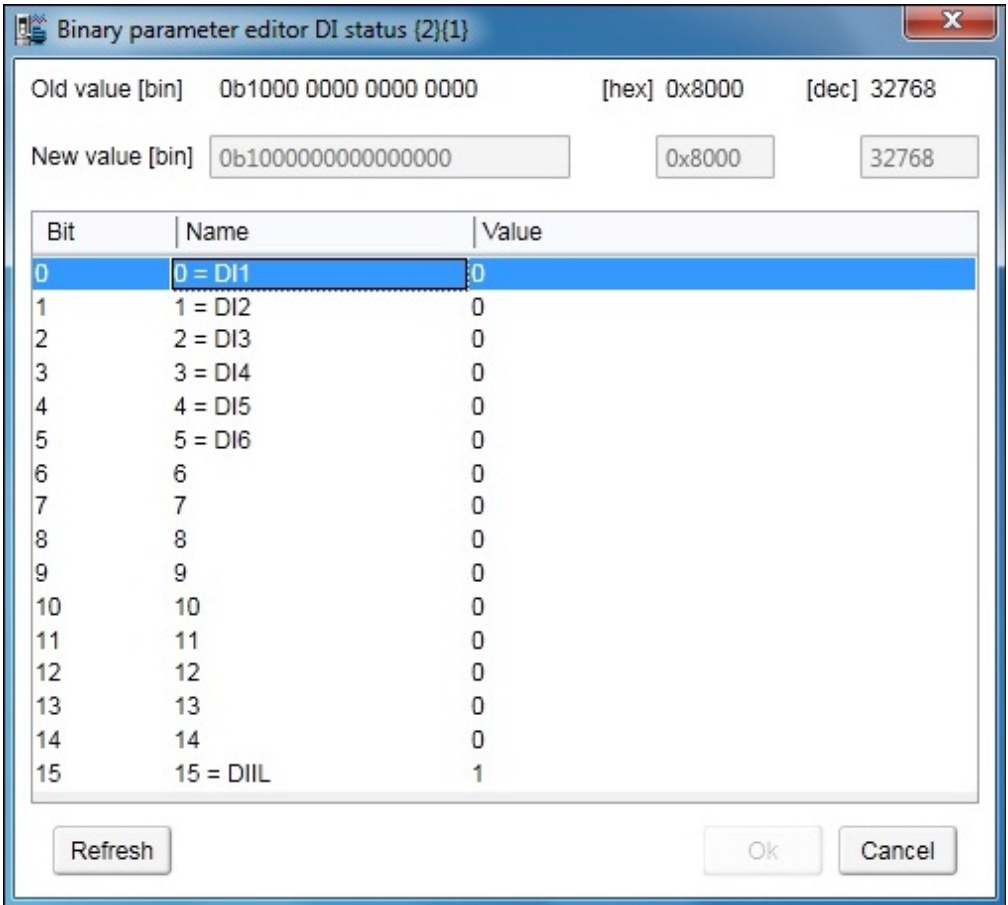


Figure 61. Binary parameter editor

Search for groups and parameters

You can search the names of parameters and groups inside the parameter window. The search result is a list of all parameters matching the search text criteria. For example, all torque-related parameters can be found by entering search criteria “torque” in the Enter keyword field and clicking the Filter check box. To uncheck the Filter box, click it again.

ZCU12_1 {2}{1} x						
torque		☒ Filter	☐ Not at default	Select columns:		☐ Enable updating
Index	Name	Value	Unit	Min	Max	Default
26. Torque reference chain						
1	Torque reference to TC	0.0	%	-1600.0	1600.0	0.0
2	Torque reference used	0.0	%	-1600.0	1600.0	0.0
8	Minimum torque ref	-300.0	%	-1000.0	0.0	-300.0
9	Maximum torque ref	300.0	%	0.0	1000.0	300.0
11	Torque ref1 source	Zero	NoUnit			Zero
12	Torque ref2 source	Zero	NoUnit			Zero
13	Torque ref1 function	Ref1	NoUnit			Ref1
14	Torque ref1/2 selection	Torque reference 1	NoUnit			Torque reference 1
16	Torque additive 1 source	Zero	NoUnit			Zero
17	Torque ref filter time	0.000	s	0.000	30.000	0.000
18	Torque ramp up time	0.000	s	0.000	60.000	0.000
19	Torque ramp down time	0.000	s	0.000	60.000	0.000
25	Torque additive 2 source	Zero	NoUnit			Zero
26	Force torque ref add 2 zero	Not selected	NoUnit			Not selected
41	Torque step	0.0	%	-300.0	300.0	0.0

Figure 62. Search example

Note: The first search takes about 30...60 seconds, because Drive composer goes through the whole parameter structure. The next searches are fast. All searches are in memory of the PC as long as Drive composer is on.

Custom parameter window

In Drive composer it is possible to customize parameter windows. This means that parameters/signals can be dragged and dropped or copied from the main parameter window or from other custom parameter windows. You can rename custom parameter windows.

For example, you can collect all the typical parameters used in a quick start-up to one window. You can create separate windows for separate functions (for example, references, limits, ACS880 I/O). Custom parameter windows open automatically when a connection to a drive is made because they are saved with the workplace. Custom parameter windows can also be opened separately.

Parameter values can be changed in custom parameter windows. Custom parameter windows can be used both in tabbed and floating windows environments.

Separate custom parameter windows can be also saved to a file by selecting **Save parameters to file**. The changed values in the Offline value column are saved as well. Therefore the contents of a custom parameter window can be used for the parameterization of another drive. You can send the saved custom parameter windows to other users and they can open them with their Drive composer to see parameters that you want them to check or download to a drive.

Note: When a custom parameter window is saved, the actual drive values of the Value column are copied to the Offline value column. During loading the values in the Offline value column are shown in comparison with the current actual values. When you open the file containing the saved custom parameter window you can copy the values of the Offline value column to another drive by clicking the **Download to device** button.

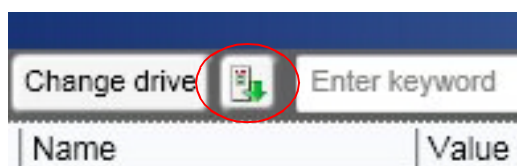


Figure 63. Download to device button

In a network of drives, you can create a custom parameter window including parameters/signals selected from different drives. To have a view where all parameters are from one drive, click the **Change drive** button and select the drive.

To see the value of a parameter/signal used in another drive, right-click the parameter/signal and select **Change drive**.

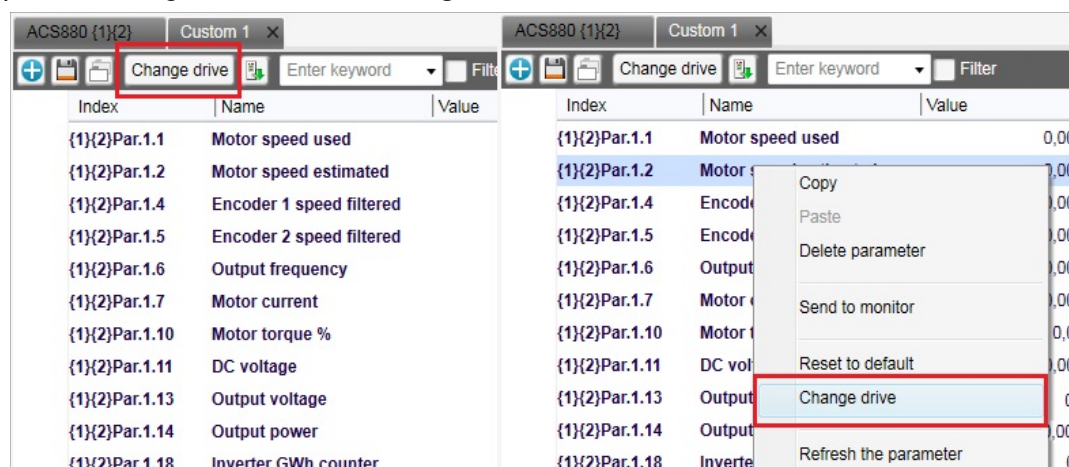


Figure 64. Change drive button

Adding parameters to a custom parameter window

The following example shows how to:

- create a new custom parameter window
- add parameters to a custom parameter window
- modify the Offline value column in the custom parameter window
- copy/download parameters to a drive.

1. Click **File** → **New** → **Custom parameter set**.

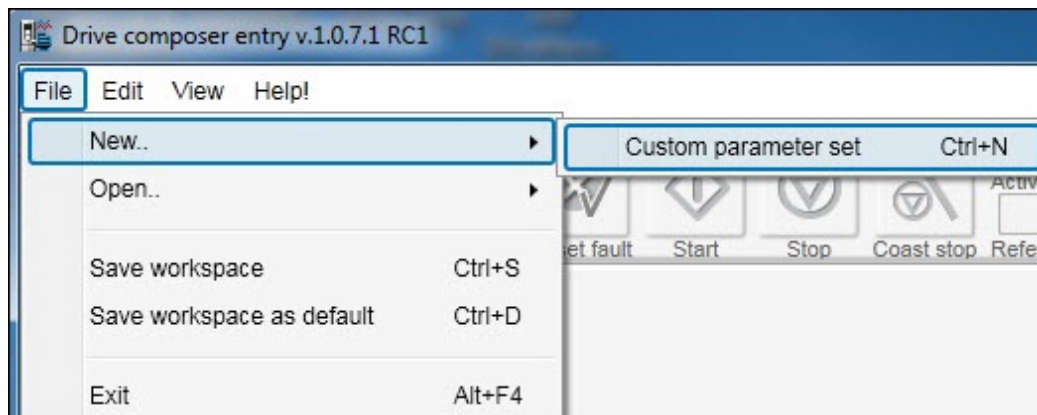


Figure 65. Custom parameter set

2. Name the custom parameter window.

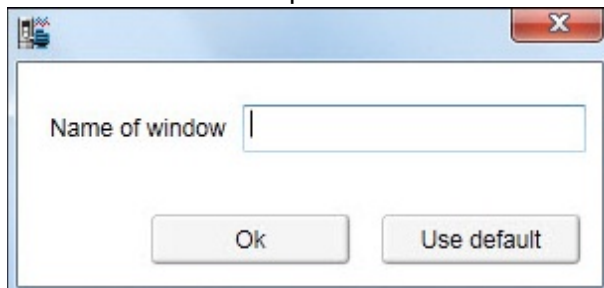


Figure 66. Name of window

3. Click **Add** button to add parameters/signals to the new custom parameter window or copy paste from other parameter window.

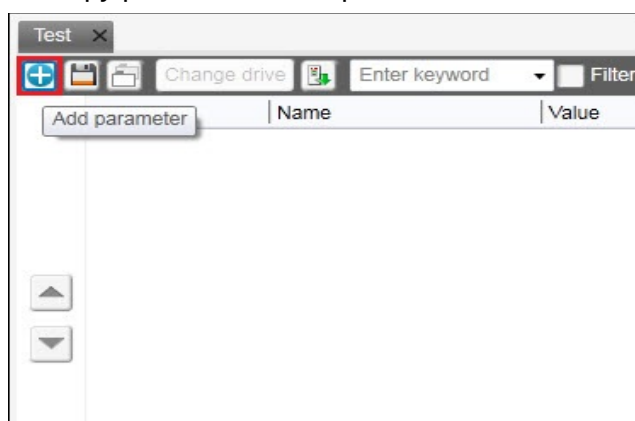


Figure 67. Add parameter button

4. Select the minimum and maximum speed values from group 30.

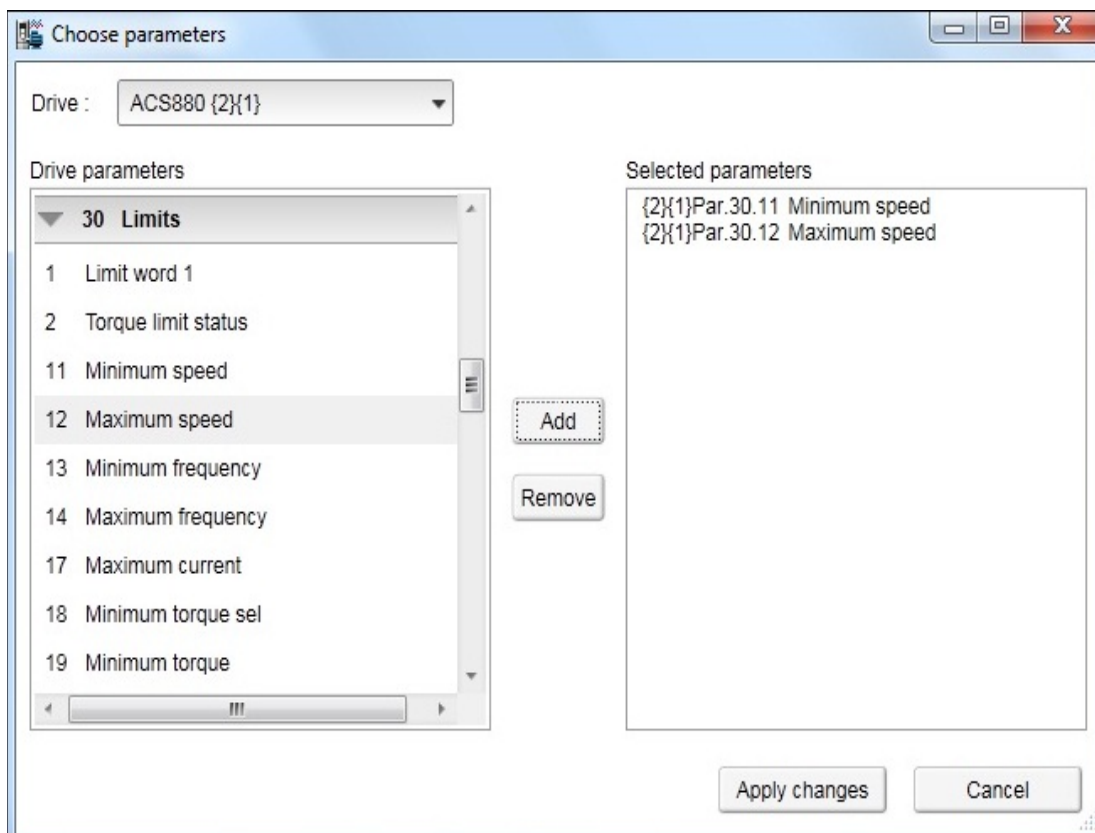


Figure 68. Add minimum and maximum values

5. Change the values in the Offline value column to be the same as the online values.
Note: The values in the Offline value column do not have to be the same as the online values.
6. Save the custom parameter window by clicking the **Save parameters to file** icon.

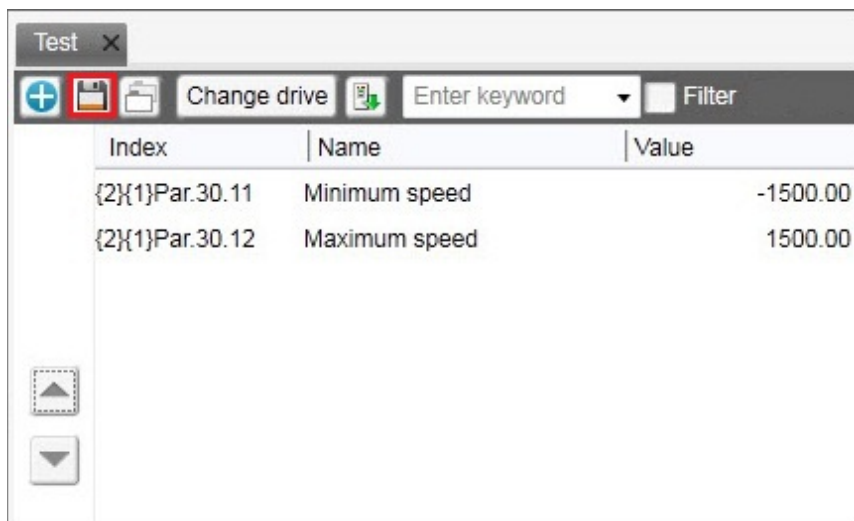


Figure 69. Save parameter to file icon

7. When connecting the next drive open the created custom parameter window by clicking **File** → **Open** → **Custom parameter file**.
 You can now see the online values of the new drive.

8. Copy the offline parameter values to a new drive by clicking **Download to device**.

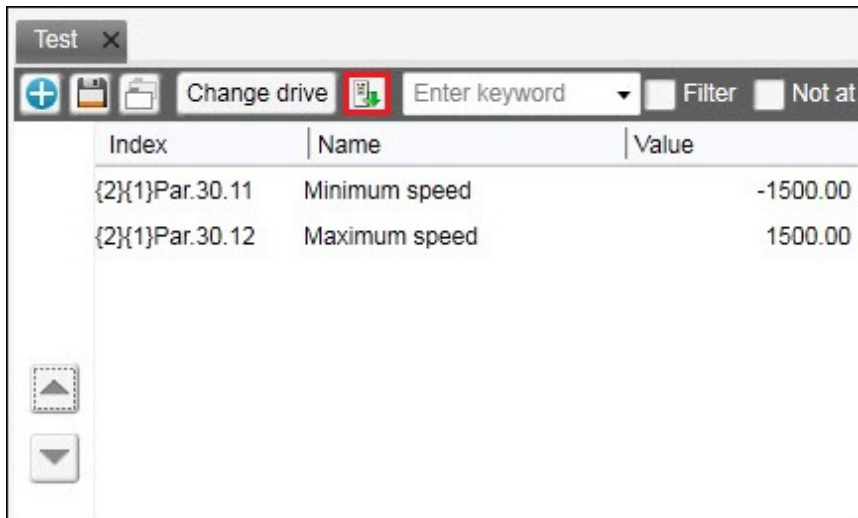


Figure 70. Download to device

Working with parameter files

■ Saving/Downloading parameter files

The following example shows how to:

- save parameters to a file
- copy/download parameters to a drive.

1. Start up the drive.
2. Click **Save parameters to file** icon in the parameter window.

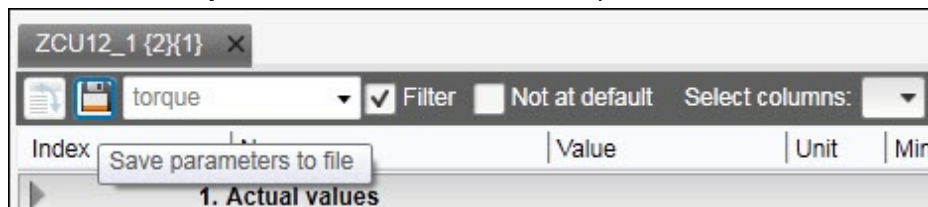


Figure 71. Save parameters to file icon

3. Select a folder, enter a name for the dcp_paramsbak file and click **Save**.

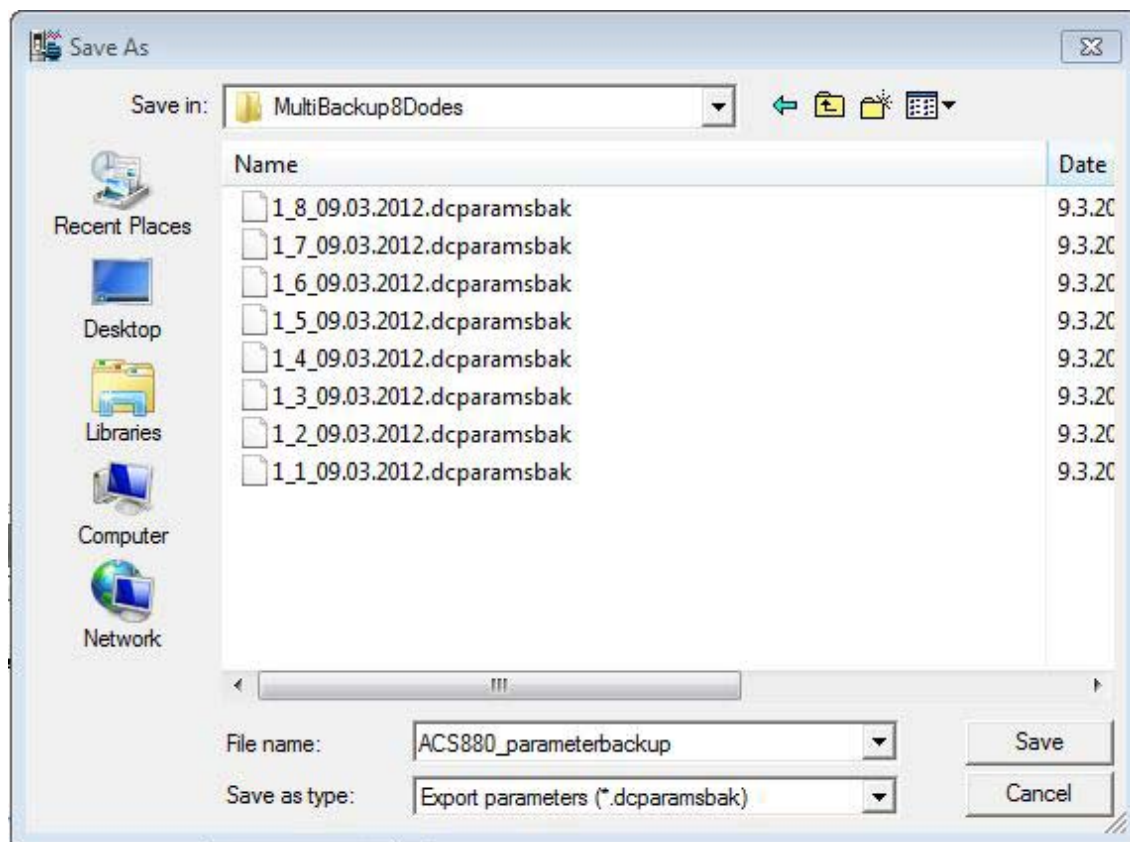


Figure 72. Saving the dcp_paramsbak file

4. To restore parameters to a drive, go to **File → Open → Parameter file...**.
A separate tab opens.
5. Copy the parameter values to a new drive by clicking the **Download to device** icon.

You are asked to confirm the action.

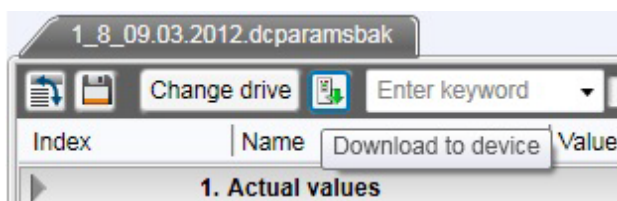


Figure 73. Download to device icon

6. If you get a message indicating that the upload of parameter values is going on, click **OK**.

At the end of the restore operation you get a report of the operation.

7. Check the parameters that have failed during the restore operation.

Note: If you use Drive composer entry you cannot modify parameter files in the offline mode. With Drive composer pro parameter values can be modified offline.

Drive composer displays the open parameter file in a tree structure.

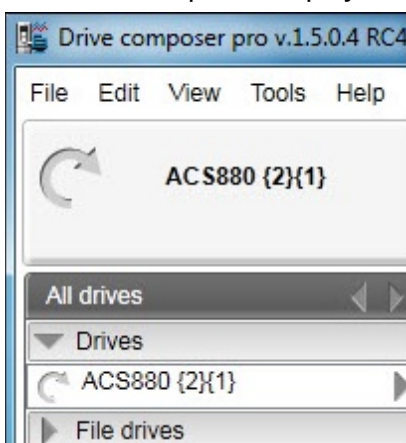


Figure 74. Parameter file in a drive tree

Note: Drive composer does not check the drive type and software version when copying parameters from a custom parameter window or a parameter file to a drive. Only visible parameters and ID run results are copied to a drive when the download command is used.

Use the backup/restore operation, for example, for the application program (Control Builder Plus program), panel home view configurations and different user settings. With the restore function you can also define how different parts are handled during the restore operation, for example, ID run results can be restored or cleared during the restore operation.

Note: The backup/restore function is available only with Drive composer pro.

■ Comparing drive data (pro)

Note: Both versions of Drive composer have **Not at default** function for listing user-changed parameters. The **Compare drive data** function compares parameter values.

With Drive composer pro you can compare parameters between

- two drives
- two parameter files
- drive and parameter file.

1. Go to **Tools -> Compare drive data (Alt+C)**.

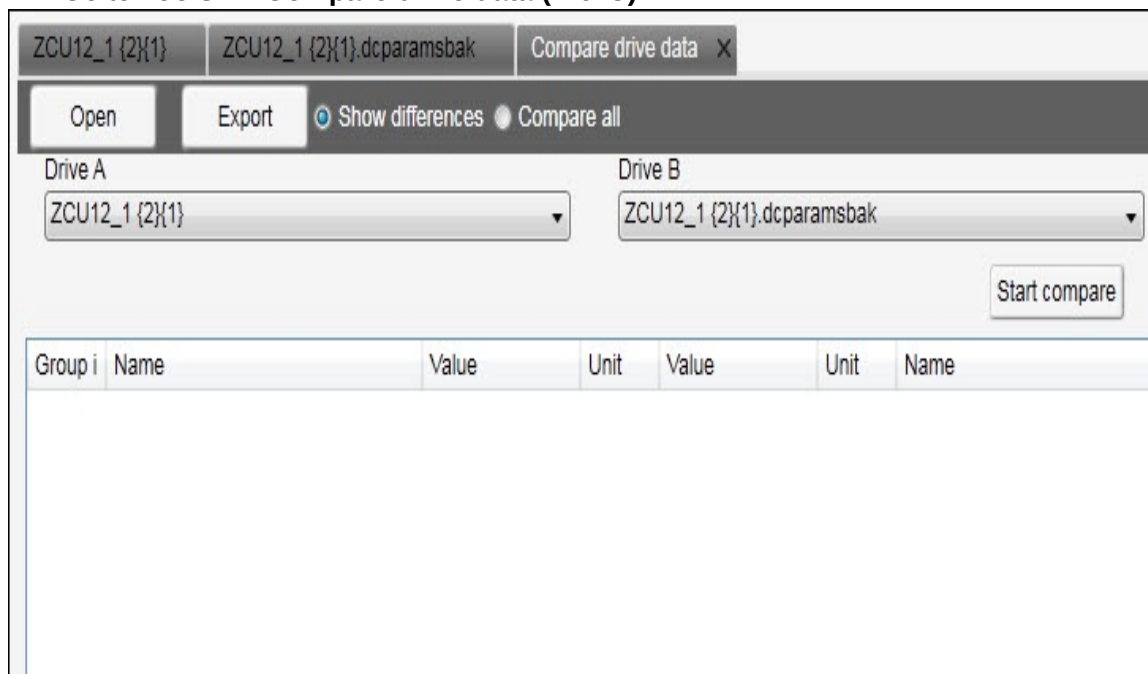


Figure 75. Comparing drive parameters

2. In a PC tool network, select drives from **Drive A** and **Drive B** drop-down menus.
3. To open a parameter file for comparison, click **Open**.
4. To see the parameter list without differences, deactivate **Show differences** check box.
5. Click **Start compare**.

Note: The operation may take a some time to compare two different parameter structures.

The following figure shows an example of the result.

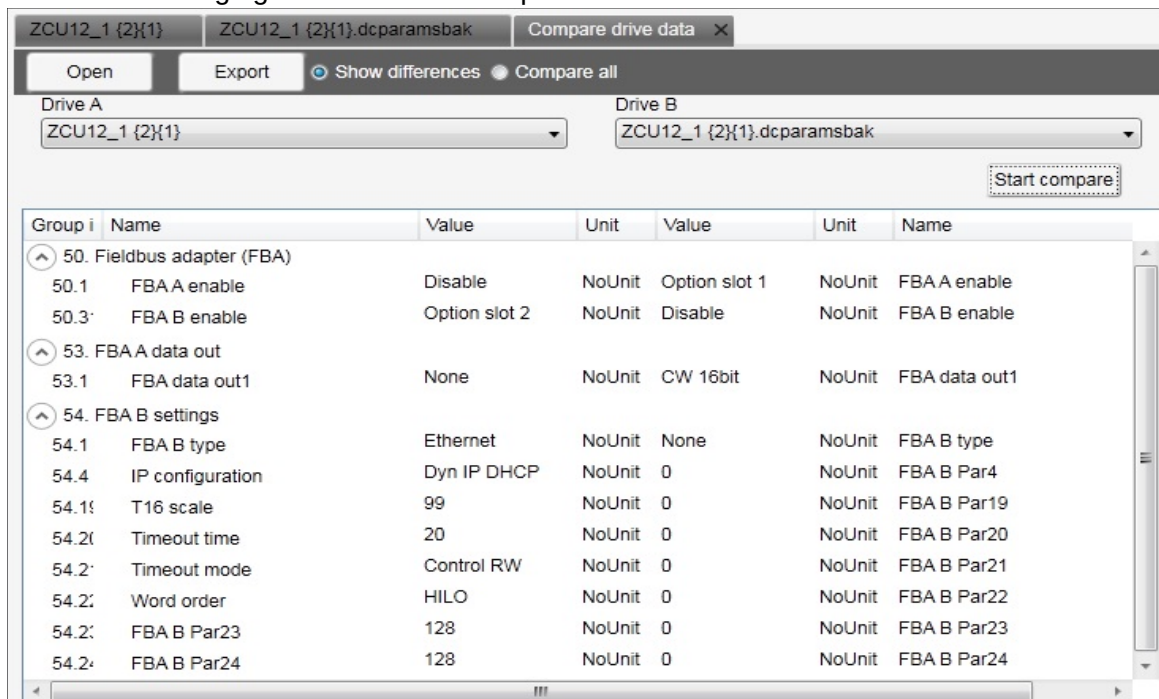


Figure 76. Result of a comparison

6. To export the result to a text (*.txt) file, click the **Export**.

Note: Click the >> << buttons to copy parameter values from Drive A to Drive B.

7

Monitor window

Contents of this chapter

This chapter describes the monitor window and its use.

Monitor window

In Drive composer you can monitor the operation of connected drives. In the online mode, the monitor window shows signal values in graphical or numerical format. The monitor data can be saved to a file for later use.

With Drive composer entry you can monitor up to 8 signals.

With Drive composer pro you can monitor up to 26 signals. If Drive composer pro is used with an ACS880 drive, it is possible to monitor 1 signal per 1-ms time interval.

The monitor window is always a tabbed window, in other words, there is only one monitor window available.

User-made monitoring settings (selected signals, y-scalings for signals, pen colors, number of grids etc.) are saved by default. In other words, when you open the tool, there are always the latest settings available.

■ Resizing the monitor window

When you start Drive composer the monitor window is in the minimized position and you have to lift it in the following way before you can start monitoring.

- You can resize the monitor window by clicking the title bar with the primary mouse button and dragging it upwards.

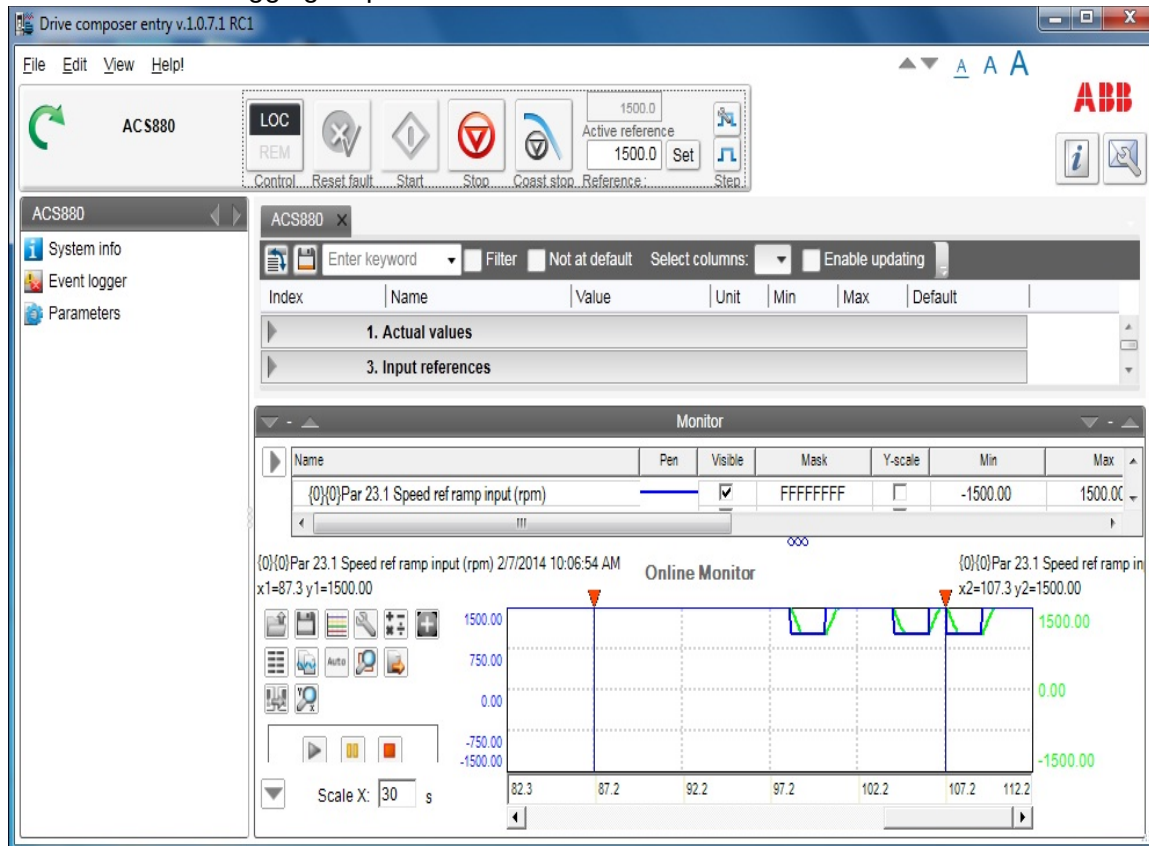


Figure 77. Monitor window

- You can resize the monitor window with the Minimize, Maximize and Split monitor buttons included in the Monitor menu bar.
- You can lift the monitor window by clicking the arrow buttons in the title bar.

Adding parameters/signals for monitoring

There are two ways to add parameters/signals to the monitor window:

- Right-click a parameter/signal in the parameter window and select **Send to monitor**.

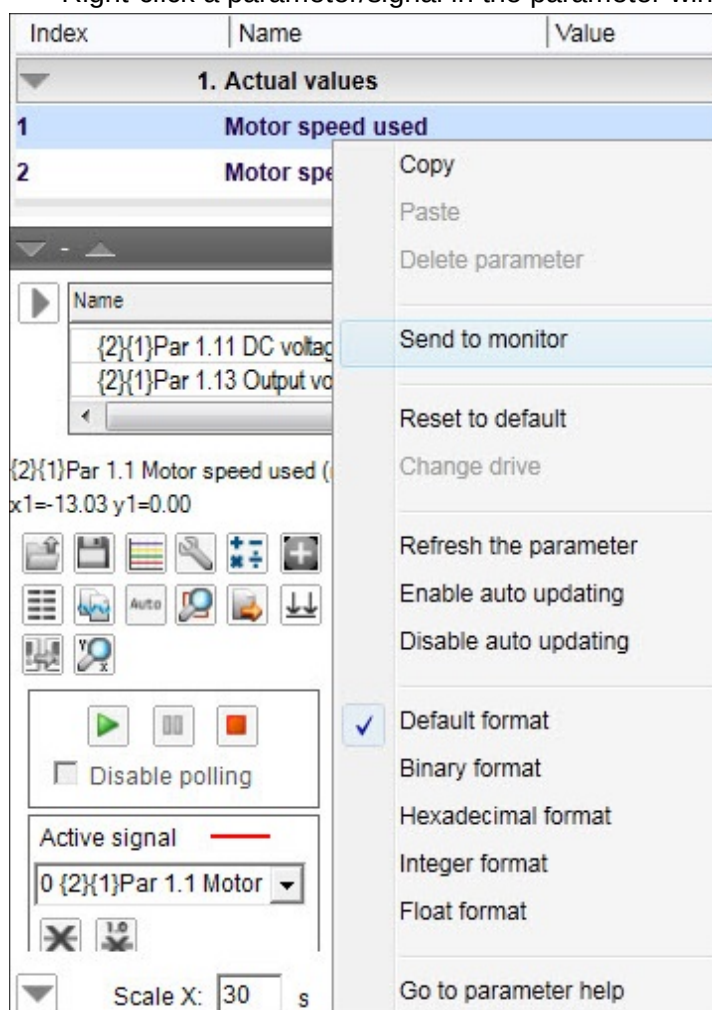


Figure 78. Send to monitor command

- Click the **Add signal** icon on the configurations and control area in the monitor window.

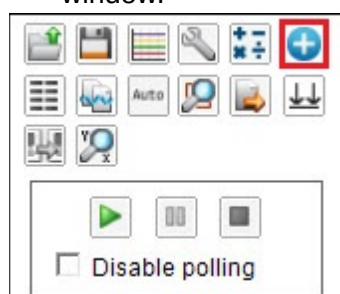


Figure 79. Icons on the configuration and control area in the monitor window

Select parameters from the Drive parameters list by double-clicking them or select a parameter and click Add button. You can add maximum of 26 parameters in Drive Composer pro and 8 parameters in Drive Composer entry.

Note: With Drive composer pro you can select signals/parameters from many different drives. Change the drive from the Drive list as shown in the following figure.

Note: In the PC tool network via Ethernet or with a panelbus, it is recommend that you select **Disable polling** to enable the best sampling result for monitoring. The status of the drive(s) cannot be read before you have unselected **Disable polling**.

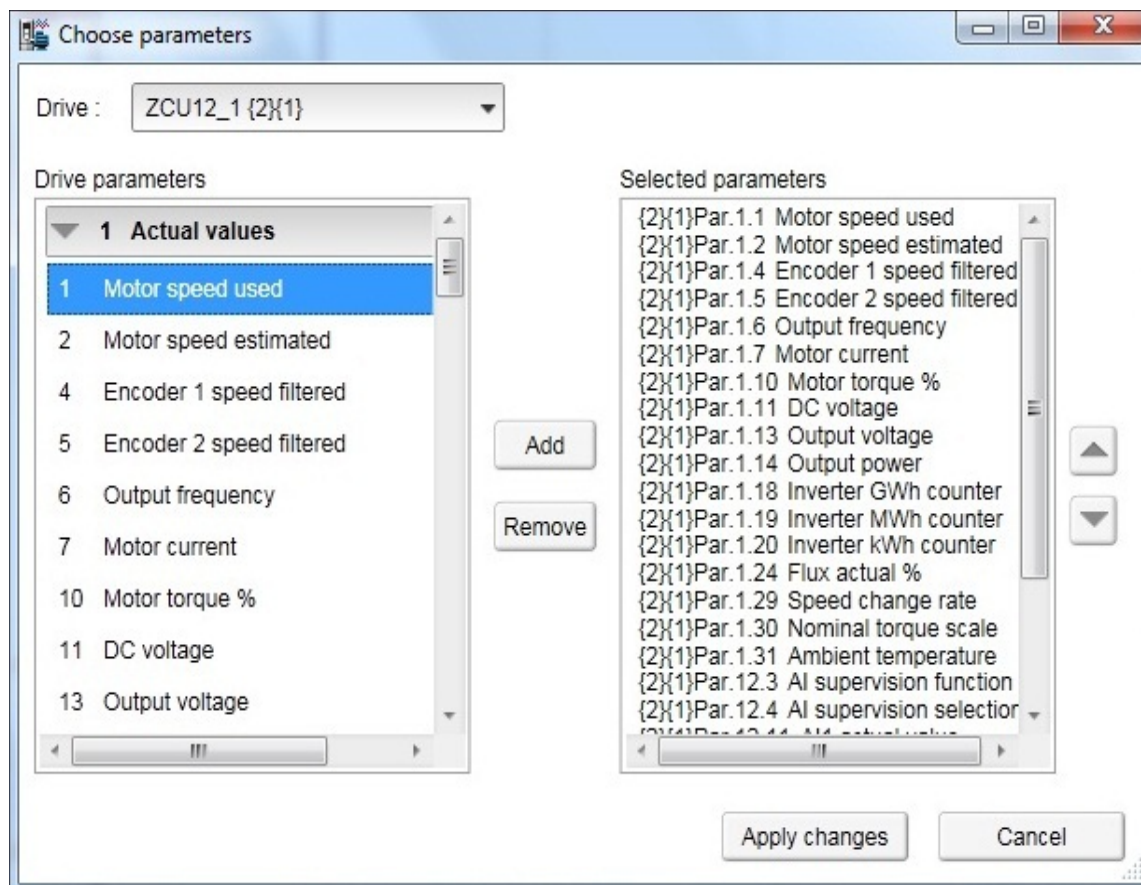


Figure 80. Drive list

The selected signals appear in the legend area.

To change the scalings of the y-axis of selected parameters/signals, click the Min or Max column in the legend area.

Active signals can be changed from the pull-down menu on the left side of the graph area.

All the other signal scalings are performed on the right side of the legend area. The right side y-scalings can be hidden by removing the check mark from the Y-scale column check box.



Figure 81. Changing the pen color and style in the legend area

You can change the color and thickness of the pen only after you have minimized, that is hidden, the legend area with the **Arrow** button on the left (see the figure above).

To change the scalings of the y-axis for selected parameters/signals, click the Min or Max column in the legend area.

■ Monitor window components

The monitor window consists of the following parts:

- Configuration and control settings
 - Graph area
 - Y-axis
 - X-axis
 - Legend area
 - Limit, color settings.
-

Configuration and control settings

Icon	Description
	Opens the saved monitored file to the graph area, which can be done only after monitoring has been stopped. File extension is *.dcemon or *.dcpmon. Note: If you have an online connection and want to start a new monitoring session after viewing opened monitored data, you can click the Monitor configuration icon.
	Saves the accumulated monitor data to a monitored data file. File extension is *.dcemon for the entry version and *.dcpmon for the pro version.
	Chart configuration can be used to set the colors for grids, number of grids, background color, color of alarm pen etc.
	Opens the Monitor settings window where you can modify the monitor settings and the select the sample interval time for monitoring. You can also set the method for starting and/or stopping monitoring (by hand/time). You have to select the HD where the saved data is stored. Note: The monitored data is saved cyclically to the selected file. Created monitoring configuration can be saved and restored from Monitor settings window.
	Allows you to create an arithmetic signal for monitoring by using two signals used in monitoring. Available operations are ADD, SUB, MUL and DIV. Note: Remember to save settings in a workspace.
	Opens a dialog where you can add or remove one signal or several signals from the monitor configuration. Note: You can use the Add signal function only when monitoring has been stopped.
	Shows the signal values in text format. Only the values seen in graph area are included in the numeric signal value list.
	Copies the monitoring graph to a clipboard.
	Scales the y-axis automatically. Note: Zooming is not possible in the Autoscaling mode.
	Resets both x- and y-axis zooming to original 100%.
	You can export the monitored data in csv format to a PC. Exported data can analyzed with other tools. Use the Tab key for delimiting the columns. File extension is *.dcexp.
	Aligns signals.
	Selects or changes the drive.
	Zooms in the x- and/or y-axis up to 1000%.

Monitor controls

Icon	Description
	Starts recording data in the selected drives and displaying it on the screen.
	Pauses monitoring on the screen but monitoring continues on the background. When you click the Pause icon again, all values are seen and monitoring continues normally.
	Stops recording data in the selected drives. The graph or numerical values remain on the screen. The graph can be saved for later purposes.

Active signal

The Active signal area consists of functions that can be done with the selected active signal. The signal can be changed from the pull-down menu.

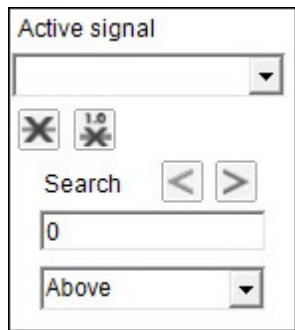


Figure 82. Active signal area

The main functions are the following:

Icon	Description
	Allows you to see the measuring points of the active signal. See figure Measuring points for the active signal . Note: This functionality works only if you have zoomed in enough in the graph area, that is, if the length of the x-axis is short enough.
	Allows you to see the numeric values of the measuring points for the active signal. See figure Measuring points for the active signal . Note: This functionality works only if you have zoomed in enough in the graph area.
	Searches to the left. The following search conditions can be selected from the pull-down menu: Above, Below or Either. See figure Search functionality .
	Searches to the right. The following search conditions can be selected from the pull-down menu: Above, Below or Either. See figure Search functionality .

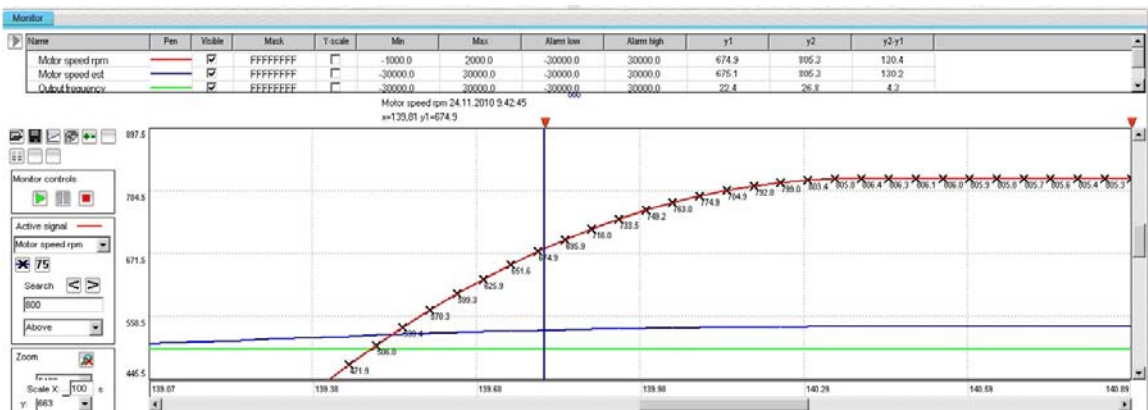


Figure 83. Measuring points for the active signal



Figure 84. Search functionality

Zooming

To enlarge the graph and take a closer look at the details, follow these steps:

1. To set the starting corner for the enlargement, place the mouse cursor in the graph area and press down the primary mouse button.
2. Drag to the opposite desired corner, and release the button.
The part of the graph that was inside the selection rectangle zooms out to fill the graph area.
3. To reset the zoom tool, click the **Reset zoom** icon.

You can also use the zooming tool by selecting independent values from x and y pull-down menus.

Note: Monitoring is paused during zooming. To continue monitoring, click the **Reset zoom** icon shown in the figure below.

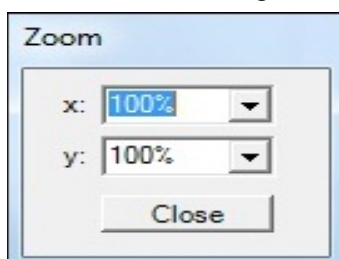


Figure 85. Zoom tool

Panning

The graph can be panned by dragging the graph with the right mouse button pressed down.

Legend area functions

The legend area shows selected signals. You can perform the following actions in the legend area:

- Change the color of the pen, thickness and style of the pen by minimizing the legend area and setting the values of each signal. See figure [Legend area functions](#).
- Make signals visible or invisible by clicking the check box in the Visible column.
- Set a bit mask for monitoring. When you double-click the value in the Mask column, a new window opens allowing you to select bits for monitoring.
- Make Y-scalings visible or invisible by clicking the check box in the Y-scale column.
- Set values for y-axis scaling. You can modify the minimum and maximum values by clicking them and entering a new value. Press Enter to enforce the new value or press Esc to restore the value.

Note: If you do not see immediate changes in the graph area, check that autoscaling is not enabled.

- Set alarm limits for monitored signals. The color of a signal changes when the limit in the Alarm low or Alarm high column is reached. The color and style for the pen are selected from **Chart settings**.
- See the double cursor tool, y1 and y2 values and y2—y1 and x2—x1 differences.

Name	Pen	Visible	Mask	Y-scale	Min	Max	y1	y2	y2-y1	x2-x1	Alarm low	Alarm high
{2}{1}Par 1.5 Encoder 2 speed filtered (rpm)		☒	FFFFFFFF	☒	-30000.00	30000.00	-	-	-	-	10000.0	30000.00
{2}{1}Par 1.6 Output frequency (Hz)		☒	FFFFFFFF	☒	-500.00	500.00	-	-	-	-	-500.00	500.00
{2}{1}Par 1.7 Motor current (A)		☒	FFFFFFFF	☒	0.00	30000.00	-	-	-	-	0.00	30000.00

Figure 86. Legend area functions

Graph area functions

The monitor window and data logger window have similar graph area facilities for displaying signal values. Their usage is described here. Before Drive composer starts monitoring online, the OnLine monitor text is seen in the graph area. When monitor files are viewed, the DataFile Viewer text is seen in the monitor window.

The graph area shows the selected signal values with different colors. The x-axis represents Time and can be set from 1 to 120s. You can change the values in online monitoring mode. Scalings of the y-axis are changed in the legend area.

For data logger files, an orange arrow-head on the x-axis indicates where triggering has occurred. Data can be combined from several files to one graph.

■ Double cursor tool

With the cursor tool, you can see the exact values of the signals at two positions in the graph area. You can move the position of cursors by clicking the primary mouse button down on the red cursor tool icon and moving it. While the mouse button is pressed down, you can move the cursor line to the left and right.

The time stamp of the cursor tool is shown in the header of the cursor tool. This is shown for the active signal. The time stamp changes if active signal is changed. The values for y1 and y2 are shown in the legend area. Signal value differences are shown in the column y2—y1. The time difference for x2—x1 is also shown in the figure below.

Name	Pen	Visible	Mask	Y-scale	Min	Max	y1	y2	y2-y1	x2-x1	Alarm low	Alarm high
{2}\1Par 1.5 Encoder 2 speed filtered (rpm)	Orange	☒	FFFFFFFF	☒	-30000.00	30000.00	-	-	-	-	10000.0	30000.00
{2}\1Par 1.6 Output frequency (Hz)	Cyan	☒	FFFFFFFF	☒	-500.00	500.00	-	-	-	-	-500.00	500.00
{2}\1Par 1.7 Motor current (A)	Green	☒	FFFFFFFF	☒	0.00	30000.00	-	-	-	-	0.00	30000.00

(2)\1Par 1.1 Motor speed used (rpm) 1/29/2014 1:51:21 PM
x1=-25.05 y1=-

(2)\1Par 1.1 Motor speed used (rpm) 1/29/2014 1:51:41 PM
x2=-5.06 y2=-

Figure 87. Double cursor tool

8

Workspace handling

Contents of this chapter

This chapter describes the workspace functionality.

Overview

Workspace consists of the user interface status, such as parameter windows and custom parameter windows.

The current workspace status can be saved to a file and restored later.

Note: You cannot save/restore the following status data:

- drive control status
- If a drive has been controlled locally with Drive composer when the workspace is saved, the workspace is saved without the change in the drive control status.
- content, status and zooming levels of a stopped, paused or running monitor.

Note: Do not edit a workspace or graph file. The workspace (.dcxml) and monitored data (.dcmon) files can contain binary data. For example, if the default workspace file is corrupted, Drive composer does not open. If Drive composer does not open, delete your default (.dcxml) file from the PC and open Drive composer again.

Creating a workspace and using it as a default workspace

1. Make a connection to a drive.
2. Resize the monitor window to half a screen.
3. Create a new custom parameter window by clicking **File** → **New..** → **Custom parameter set** and name it “Own limit window”.

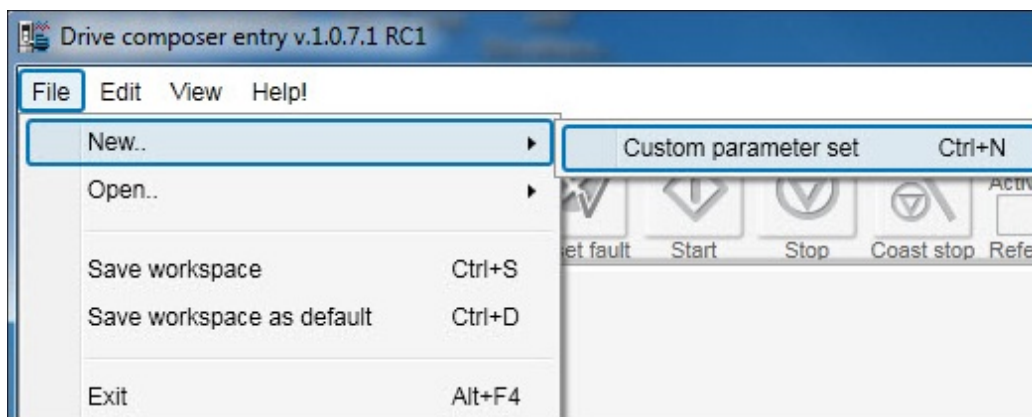


Figure 88. Custom parameter set

4. In the File menu, click **Save workspace** to save the workspace.

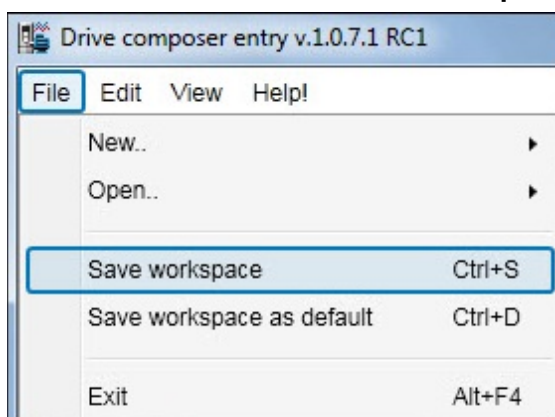


Figure 89. Save workspace command

5. Create another custom parameter window and name it “Own reference window”.
 6. Select floating windows by clicking **View** → **Floating windows**.
 7. Enter keyword “Limit” in the Enter keyword field of the main parameter window.
 8. Select parameters in the main parameter window and drag and drop or copy them to custom parameter window Limit.
 9. Clear the search result and enter keyword “ref” in the Enter keyword field.
 10. Select parameters in the main parameter window and drag and drop or copy them to custom parameter window Own reference window.
 11. Close the main parameter window.
 12. Click **Event logger** icon in the drive list on the left.
-

13. Click **File** → **Save workspace** and name it "OwnWorkspaceFor_ACS880". See figure [Save workspace command](#).

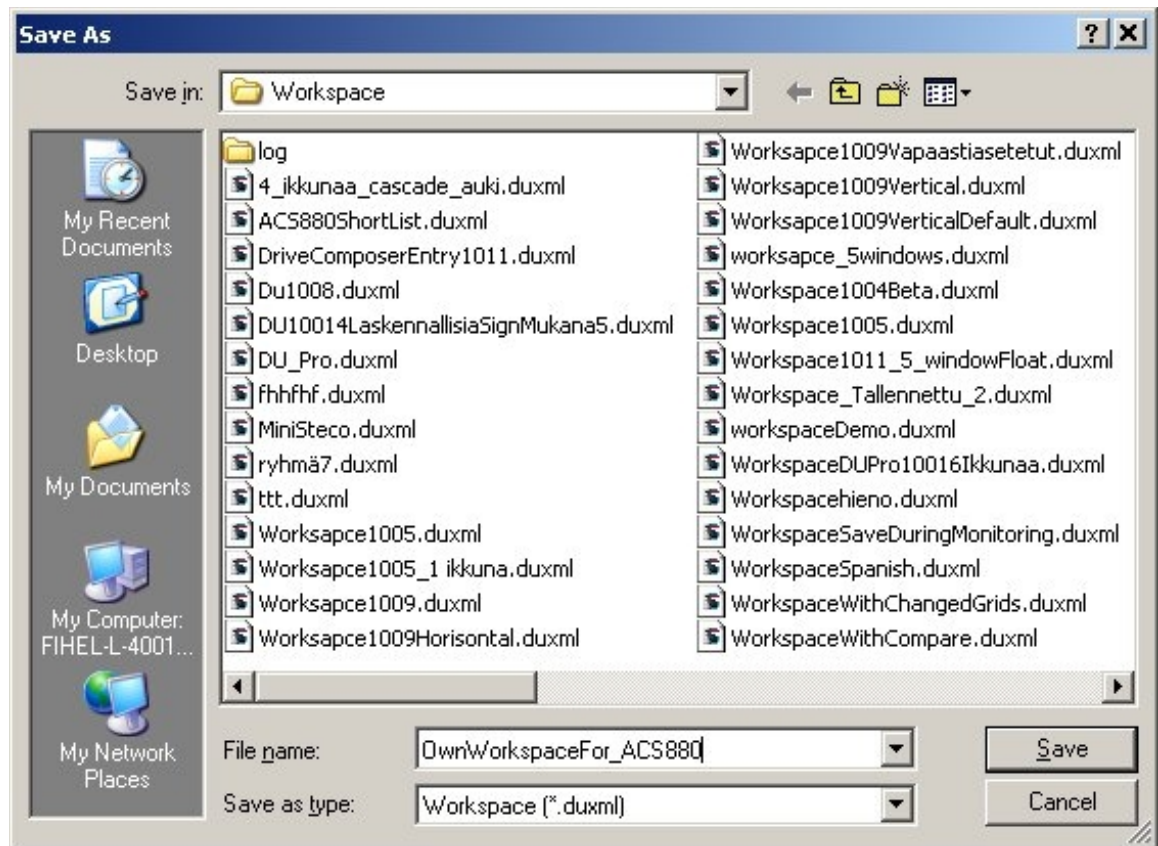


Figure 90. Name for your own workspace

14. Close the connection to the drive and make a new connection.

15. Click **File** -> **Open..** -> **Open workspace** and open the workplace that you have saved.

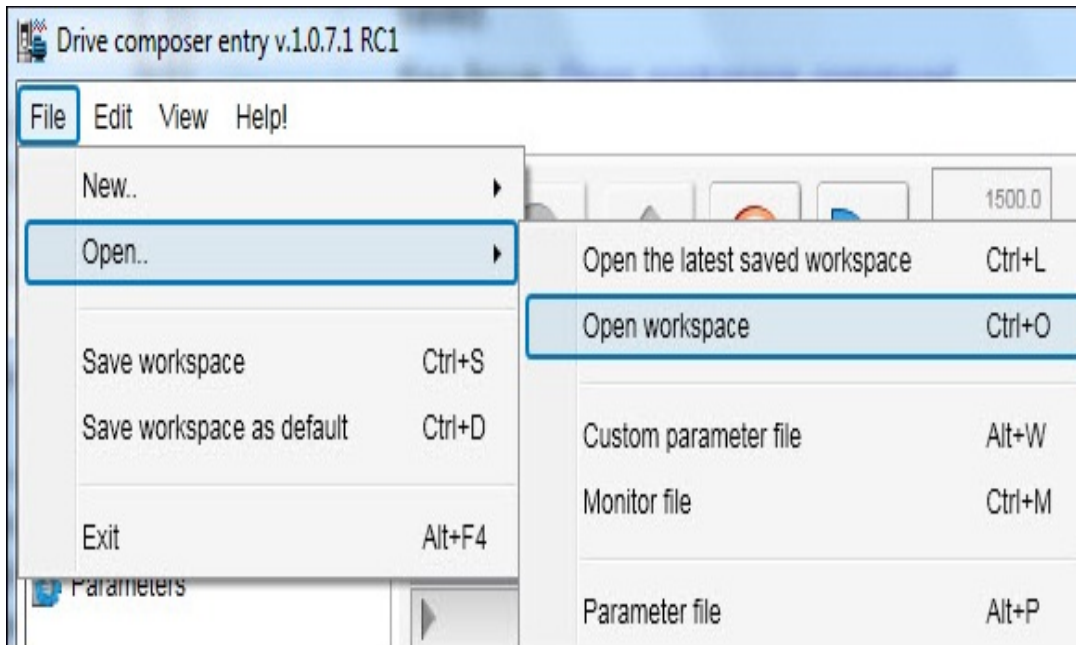


Figure 91. Open workspace command

The workspace is ready to use for commissioning and maintaining drives.

The workspace can also be saved as a default workspace which opens automatically when Drive composer is started.

9

Event logger

Contents of this chapter

This chapter describes the event logger view and its use.

Event logger view

The event logger view displays the contents of an event logger of a connected drive. The contents of an event logger can be faults (stopping the drive), alarms or events. See the figure below.

With some drives there can be more data of a fault in the monitor window.

Note: Fault logger data can also be seen from other faults than the latest active faults.

Event logger ZCU12_1 {2}{1} X						
Refresh log						
Drive	Icon	Time	Fault	Description	AUX code	
ZCU12_1 {2}{1}		19.02.2013 21:34:40.432	64FF	Fault reset		
ZCU12_1 {2}{1}		18.02.2013 19:52:36.526	64FF	Fault reset		
ZCU12_1 {2}{1}		18.02.2013 19:48:01.948	6591	Backup/Restore Timeout		Par.90.1 = 0.00 rpm Par.1.7 = 0.00 A Par.6.11 = 0x0000 1233 NoUnit Par.6.1 = 0x0000 0477 NoUnit Par.1.11 = 568.38 V Par.1.10 = 0.0 %
ZCU12_1 {2}{1}		08.02.2013 20:44:03.557	A6A6	Supply voltage unselected		
ZCU12_1 {2}{1}		08.02.2013 20:41:34.876	A6A6	Supply voltage unselected		
ZCU12_1 {2}{1}		08.02.2013 20:30:08.856	A6A6	Supply voltage unselected		
ZCU12_1 {2}{1}		08.02.2013 20:27:53.846	A6A6	Supply voltage unselected		
ZCU12_1 {2}{1}		08.02.2013 20:19:45.148	64B1	Internal SSW fault	80	Par.90.1 = 0.00 rpm Par.1.7 = 0.00 A Par.6.11 = 0x0000 0000 NoUnit Par.6.1 = 0x0000 0000 NoUnit Par.1.11 = 0.00 V Par.1.10 = 0.0 %
ZCU12_1 {2}{1}		08.02.2013 20:14:58.631	6581	Parameter system	10D	
ZCU12_1 {2}{1}		08.02.2013 20:14:58.535	64B1	Internal SSW fault	A0	
ZCU12_1 {2}{1}		08.02.2013 20:14:58.532	64A1	Internal file load	C	Par.90.1 = 0.00 rpm Par.1.7 = 0.00 A Par.6.11 = 0x0000 0000 NoUnit Par.6.1 = 0x0000 0000 NoUnit Par.1.11 = 0.00 V Par.1.10 = 0.0 %

Figure 92. Event logger view

The event logger always relates to a single drive and resides in its window.

The Icon column shows the following alarm and fault icons:

- Red circle with a white cross (x) means that the drive has a fault.
- Yellow triangle with an exclamation mark means that the drive has an alarm.
- Grey circle or triangle means that the fault or alarm has disappeared from the drive.

The time stamp for faults, alarms and events comes from the drive.

Faults, alarms and events can be sorted by clicking the header of the Fault column.

Fault data logger

The **Fault data** icon in the Event logger view shows that the drive has fault data that can be seen with a monitor component. The icon is visible only if the drive sports the functionality.



Figure 93. Fault data icon

When you click the icon, the following message appears: “Please wait. Loading fault data appears”. When the message box disappears, the data has been loaded.

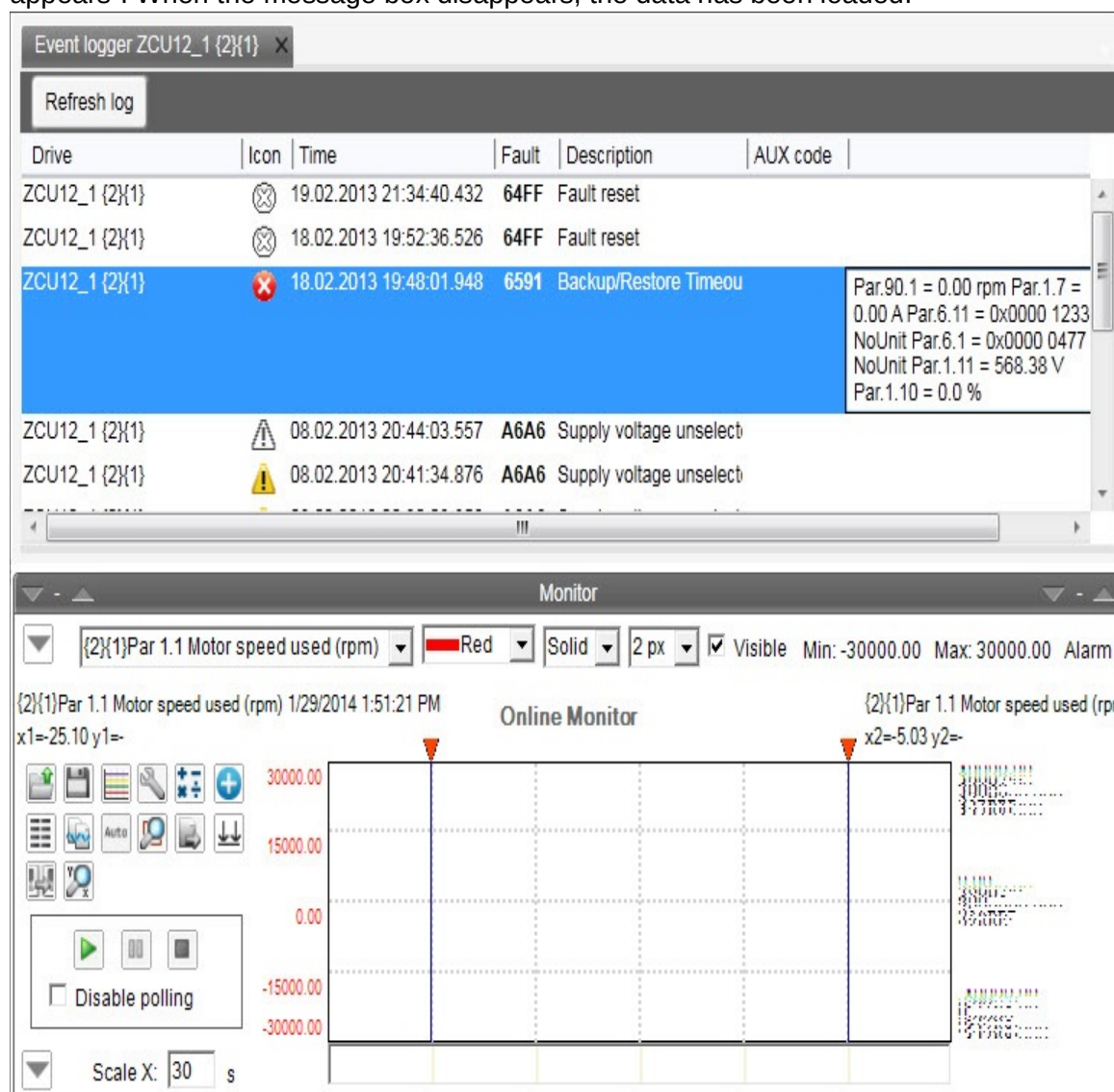


Figure 94. Fault data logger in the monitor window

Save the fault data.

Note: To continue the normal monitoring, click the **Monitor configuration** icon in the Monitor controls box.

10

Diagnostics

Contents of this chapter

This chapter describes how to troubleshoot a drive with the **Support package** button of Drive composer and a data logger included in the drive.

Support package

By clicking the **Support package** button, you can collect troubleshooting data and send it to the support personnel for analysis.



Figure 95. Support package button

Drive composer creates a SupportFiles.dcsupport file to the email program installed in the PC. The file can also be saved manually. The support package includes different files depending on the drive type. All parameters, contents of the event logger and System info are always available.

To open the contents of the SupportFiles.dcsupport file with WinZip, rename the file as SupportFiles.zip.

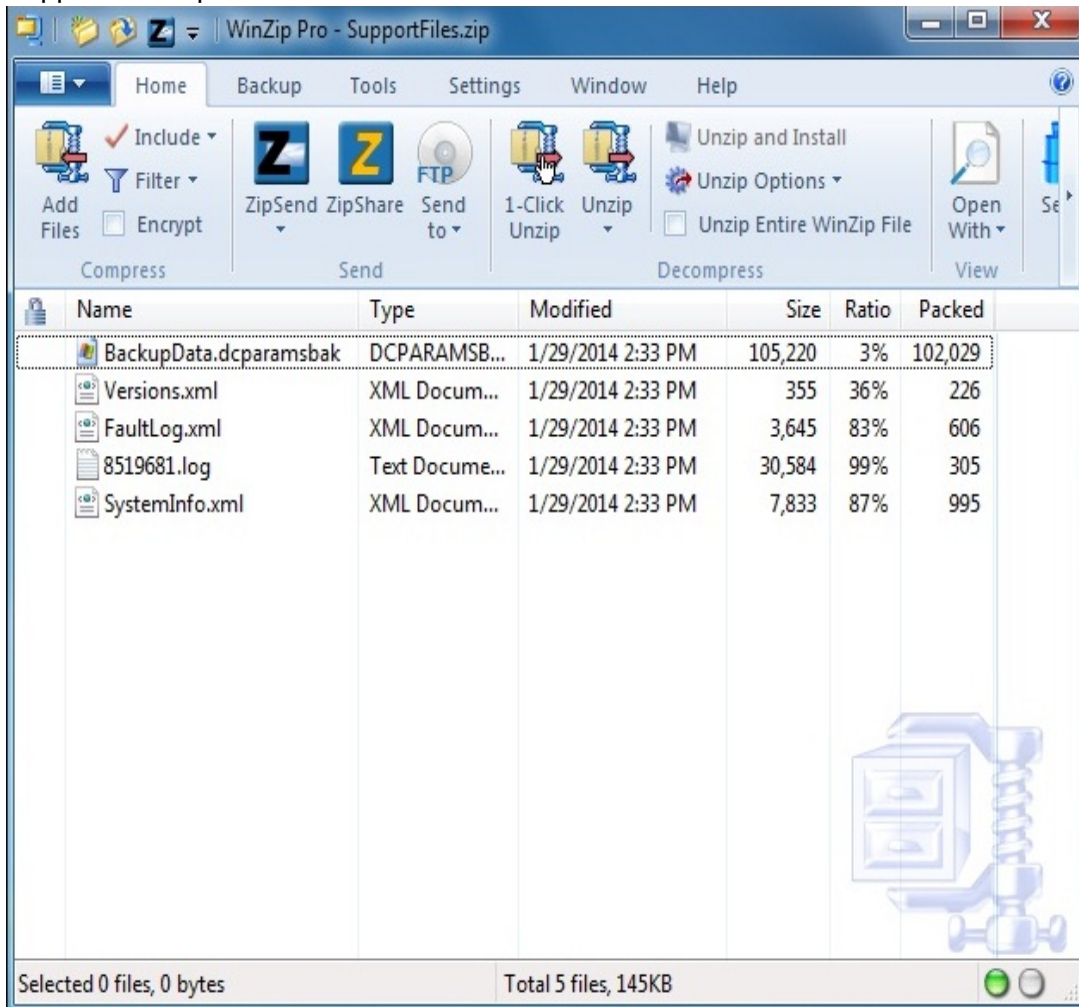


Figure 96. Contents of the SupportFiles.dcsupport file

The BackupData.dcparamsbak file can be opened with Drive composer. Other files can be opened with standard windows programs. In the figure below the FaultLog.xml file has been opened with Microsoft Excel.

	A	B	C	D	E	F	G	H
	Time	Drive	FaultCode	Type	AuxCode	Description	FileRef	Extra
1	19.02.2013 21:34:40.432	ZCU12_1 {2}{1}	64FF	F-		Fault reset		
2	18.02.2013 19:52:36.526	ZCU12_1 {2}{1}	64FF	F-		Fault reset		
3	18.02.2013 19:48:01.948	ZCU12_1 {2}{1}	6591	F		Backup/Restore Timeout	8519681	Par.90.1 = 0.00 rpm
4	08.02.2013 20:44:03.557	ZCU12_1 {2}{1}	A6A6	E-		Supply voltage unselected		
5	08.02.2013 20:41:34.876	ZCU12_1 {2}{1}	A6A6	E		Supply voltage unselected		
6	08.02.2013 20:30:08.856	ZCU12_1 {2}{1}	A6A6	E		Supply voltage unselected		
7	08.02.2013 20:27:53.846	ZCU12_1 {2}{1}	A6A6	E		Supply voltage unselected		
8	08.02.2013 20:19:45.148	ZCU12_1 {2}{1}	64B1	F	80	Internal SSW fault		Par.90.1 = 0.00 rpm
9	08.02.2013 20:14:58.631	ZCU12_1 {2}{1}	6581	F	10D	Parameter system		
10	08.02.2013 20:14:58.535	ZCU12_1 {2}{1}	64B1	F	A0	Internal SSW fault		

Figure 97. FaultLog.xml file opened with Microsoft Excel

Drive application programming license

The drive application programming license N8010 is required for downloading and executing the program code on the ACS880 drive. In DriveComposerPro, select **System info** tab. Check if the appropriate license is loaded to the drive. If the required license code is not available, contact ABB representative.

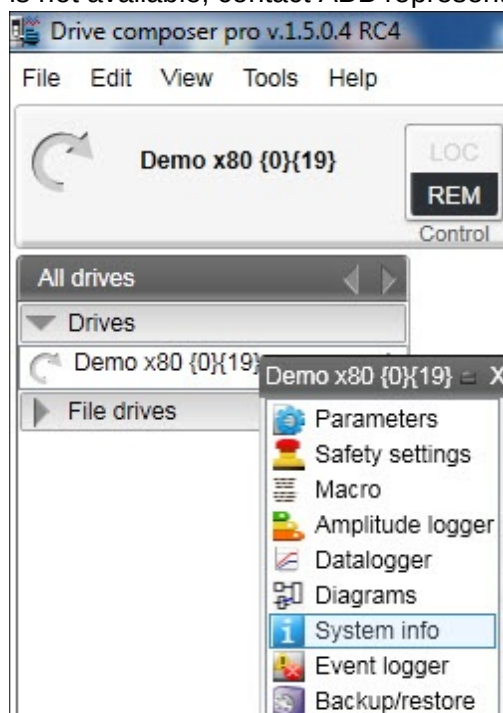


Figure 98. System info command

System info

The System info tab provides basic information about the drive and its options, for example, drive type code and firmware version.

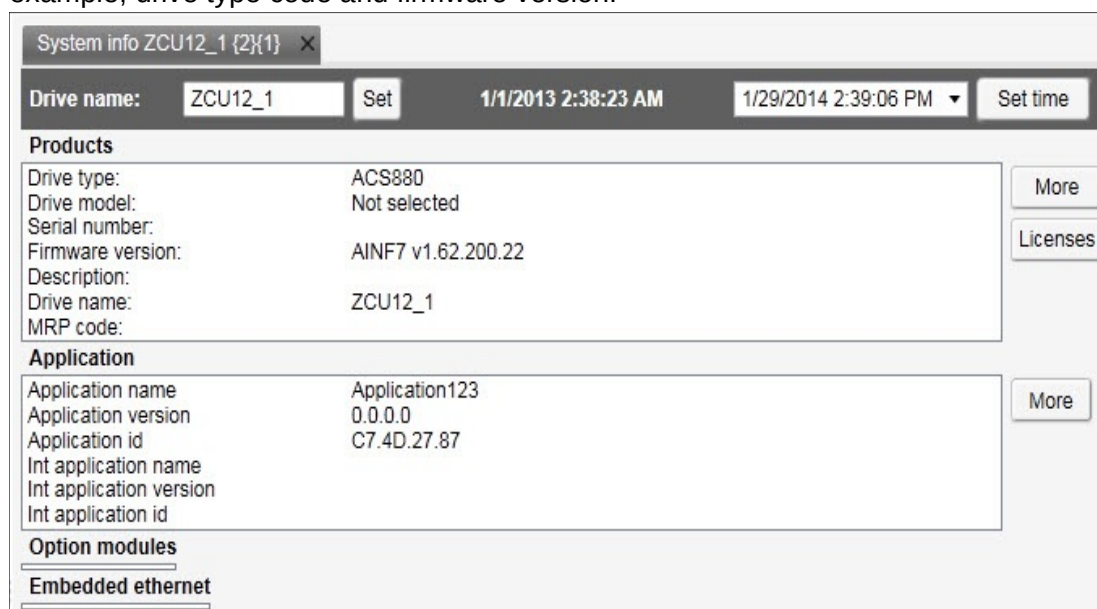


Figure 99. System info

You can also set the time for the drive and name the drive.

Data logger (pro)

ABB drives have data logger(s) that can record data from various signals of a drive even if the drive is not connected to a PC. A Datalogger is operated with the Datalogger view.

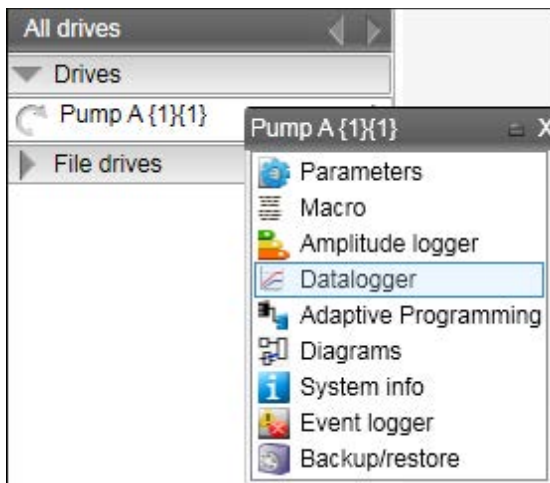


Figure 100. Data logger configuration

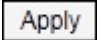
The data collecting can be stopped with a specific stop command or automatically when a triggering condition is true in the drive. After data collection stops you can read and study the data in Drive composer pro.

■ Data logger settings

The data logger settings window contains the following functions:

- Data logger commands
- Data logger content configuration
- Data logger trigger configuration

Data logger commands

Button	Description
	Start button records data in the current logger of the drive until data logger is triggered or stopped.
	Stop button ends recording immediately without any post trigger recording.
	Trigger button triggers the associated logger in the drive. Trigger data logger is displayed in data logger status with trigger code 15.
	Upload button moves data from the drive to PC and draws it to the monitor window. Data logger replaces any previous data in monitor window.
	Apply button applies monitored signal and data logger sampling settings.

Data logger content configuration

With the data logger content configuration you can determine which data logger of a drive is used.

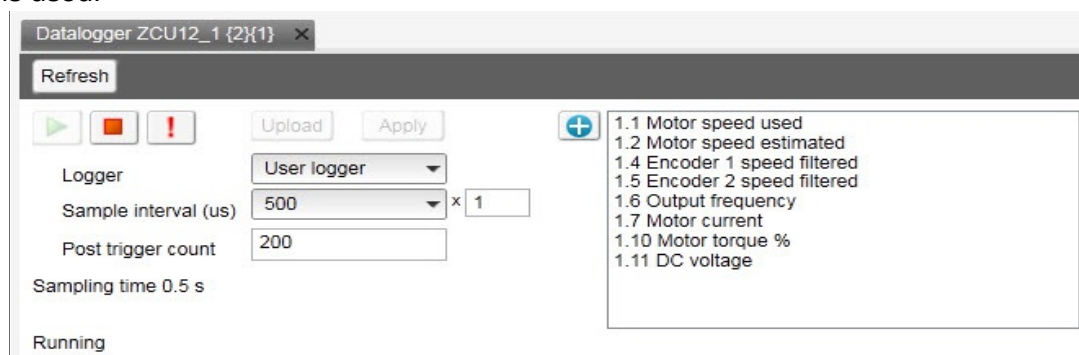


Figure 102. Data logger content configuration

- **Logger** determines which logger settings are modified. A drive has user logger(s) and factory logger(s). Factory logger settings cannot be modified.

- **Sampling interval** determines in microseconds how often the logger reads samples of the signal values. The time level shows the available lengths of the internal cycle time of the drive. Sample interval is formed from multiplier (1-65535) and time level selection.
- **Post trigger count** specifies how many samples are stored after the triggering condition occurs. Data logger total space count depends on the drive type, selected signal types and total signal count.
- **Sampling time** shows the minimum sampling time with a selected number of signals and a selected sample interval.
- **Logger signals panel** shows a list of the signals selected to record. You can add/remove a signal by clicking the Add signal icon.

To add parameters to the logger, proceed as follows:

1. In the Datalogger screen, click  to add parameters.
2. Select a parameter in the **Drive parameters** list and double-click or click **Add**. The parameter is added to Selected parameters.

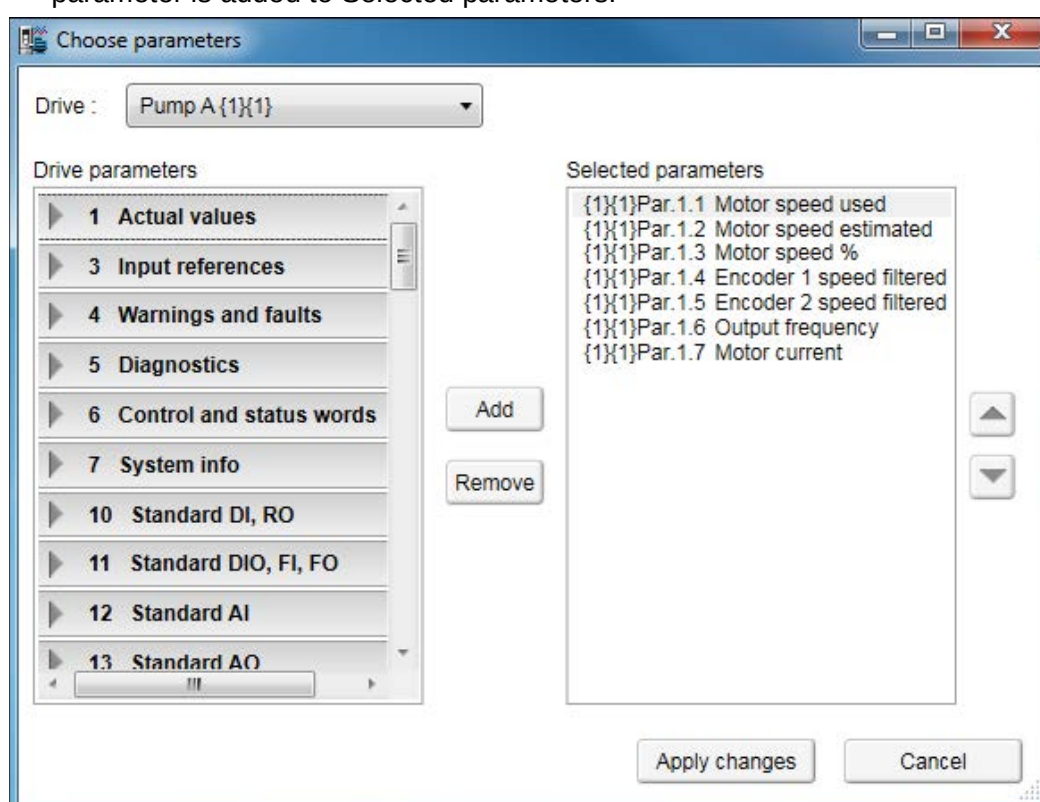


Figure 103. Parameter window

Note: The maximum number of signals that a logger can record at one time depends on the drive. Add button is disabled when maximum number of parameters are reached.

3. To remove the parameter from Selected parameters, select the desired parameter and click **Remove**.
4. Click **Apply changes** after making the changes.

Data logger trigger configuration

Data logger has four triggers that can be configured to stop the data logger. After data logger has triggered, data logger samples post trigger amount of new samples.

Trigger configuration

Apply

Trigger

Trigger #1

Signal

+

Type

Disabled

Triggers

ID	Type	Timelevel	Variable	Level	Hysteresis	Logger	Triggered
Trigger #1	Disabled	-	-	-	-	User logger	
Trigger #2	Disabled	-	-	-	-	User logger	
Trigger #3	Disabled	-	-	-	-	User logger	
Trigger #4	Disabled	-	-	-	-	User logger	

Figure 104. Data logger trigger configuration

■ Adding a trigger

1. To modify the conditions of a trigger, select the trigger from the **Trigger** drop-down menu.
Trigger 1 is normally used for user logger 1, Trigger 2 for user logger 2 etc.
2. Choose the type for the triggering condition from the **Type** drop-down menu.
Following are the alternatives (however, not all of them are available at all times):
 - **Bit mask** stops according to the bit mask of the selected signal.
 - **Disabled** can temporarily disable a trigger condition.
 - **Falling edge level** stops according to the selected signal, triggering level and hysteresis values.
 - **Fault** stops when the drive reports a fault.
 - **Event** stops when the drive reports an event.
 - **Rising edge level** stops according to the selected signal, triggering level and hysteresis values.
 - **Warning** stops when the drive reports a warning.
3. If you use Rising edge level or Falling edge level as the type for the triggering condition, see [Using the level triggers](#).
4. Click **Apply**.

Using the level triggers

When condition Rising edge level is used, the function wakes up when the actual value of the triggering signal is below the triggering level - hysteresis. Similarly, when condition Falling edge level is used, the function wakes up when the actual value of the triggering signal is above the triggering level + hysteresis.

Rising edge	Triggering signal is below the triggering level when the data logger is started: Triggering occurs when the signal goes above the triggering level. Triggering signal is above the triggering level when the data logger is started: Triggering occurs when the signal goes above the triggering level, but before that the signal must go below the triggering level - hysteresis.
Falling edge	Triggering signal is above the triggering level when the data logger is started: Triggering occurs when the signal goes below the triggering level. Triggering signal is below the triggering level when the data logger is started: Triggering occurs when the signal goes below the triggering level, but before that the signal must go above the triggering level + hysteresis.

Using bit mask trigger

Bit mask trigger reads signal value and masks out user selected bits with given mask. Masking is done by using a logical AND operation. Masked value is compared to user given bit values selection. When masked value and bit values match, data logger is triggered.

■ Uploading triggered or stopped data logger data

1. In the data logger view select a logger from the **Logger** drop-down menu.
If the logger status is stopped or triggered, data can be uploaded.
2. Click **Upload** to upload data to the monitor window.
Note: If you want to continue normal monitoring after using the data logger, click **Monitor configuration** icon and select a sampling interval for monitoring.



Figure 105. Continue monitoring after using the data logger

3. Click **Add signal** icon to add signals for monitoring.

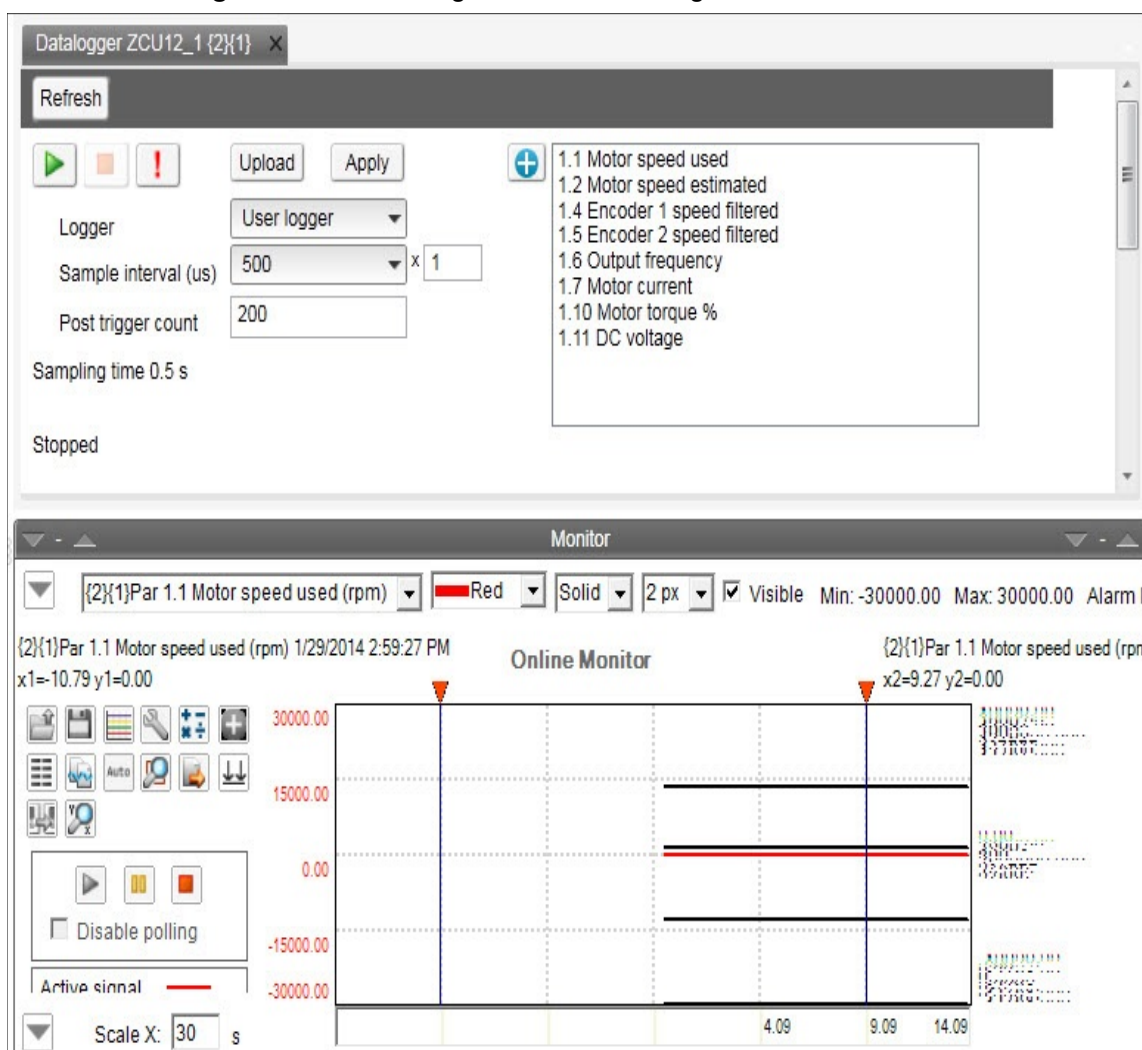


Figure 106. Uploaded data logger data

Amplitude logger (pro)

ABB drives have an amplitude loggers that can record data from various signals of a drive. The results of an amplitude logger 1 (current) are displayed by the following curve. Each parameter represents an amplitude range and shows what portion of the samples fall within that range.

Note: Data loggers or amplitude loggers are not available for all ABB drives.

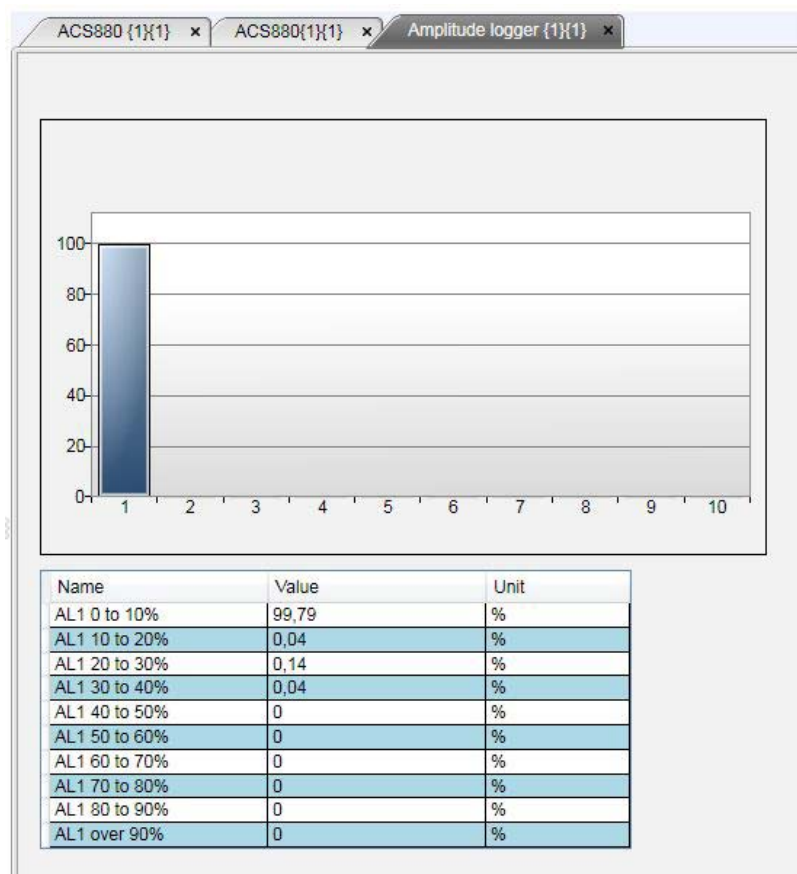


Figure 107. Amplitude logger

Macro (pro)

ABB drives have Macro functionality that can automatize a task or sequence of tasks. Macros are used for parameter value setting to multiple networked drives when custom window functionality is not sufficient. Macros may also be used for tasks which require logical or conditional parameterization of a drive.

- Right-click a drive and select **Macro**.

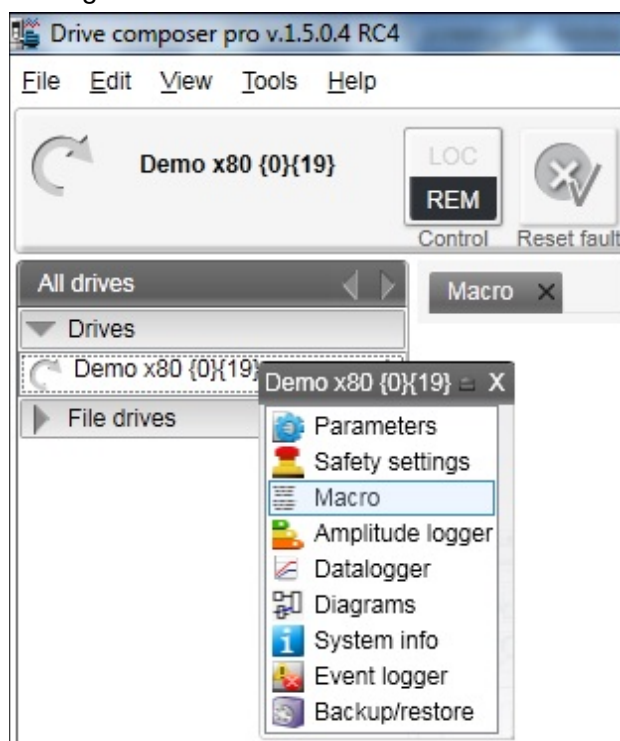


Figure 108. Macro command

A Macro screen displays.

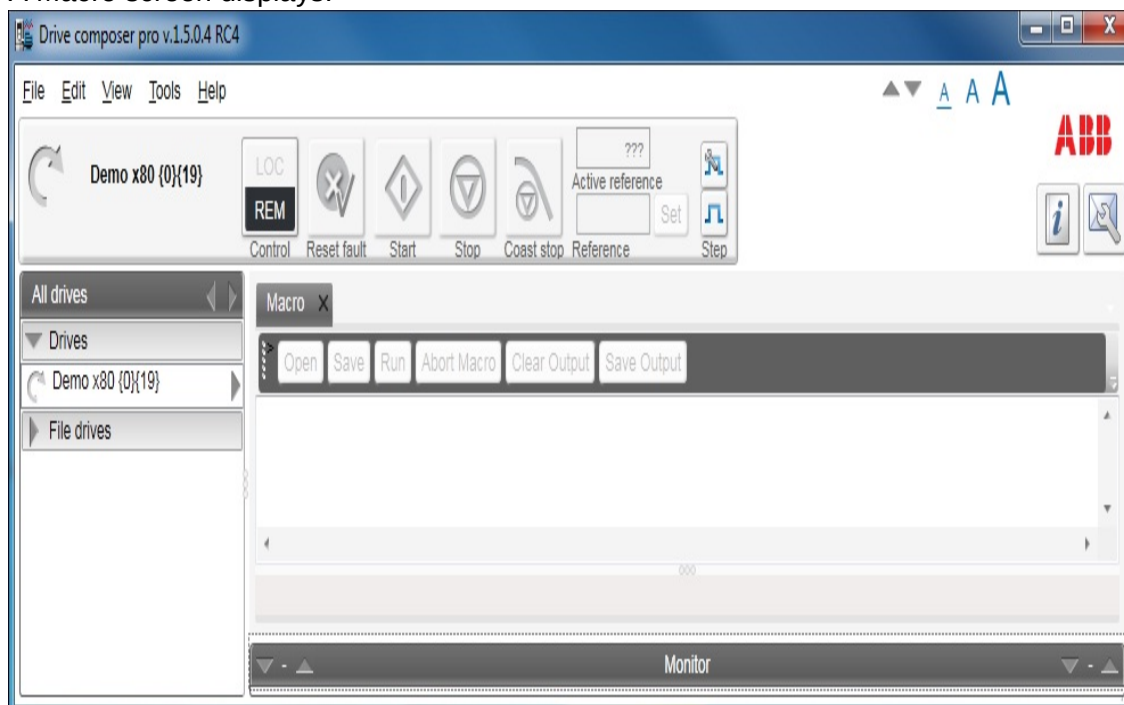


Figure 109. Macro

Macro commands

■ Macro language

Macro language is based on PAWN. For general programming guidelines, refer to *PAWN manual*.

Note: Some PAWN features are disabled for security reasons, such as file operations and other external IO functions.

Simple example

Macro tries to read parameter 1.1 value from each target in 100 network channels.

```
main()
{
    for(new i = 0; i < 100; i++)
    {
        //note the channels are indexed instead of nodes
        // this should be modified according network topology

        //change target
        Target(i+1,1)
        new targetName[100]
        //get target name
        TargetName (targetName)

        //read parameter 1.1 value
        new Float:val0101 = ParRead(1,1);
        //output to console
        printf "%s(%d,%d): %f\n", targetName, 1, 1, val0101 ;
    }
}
```

■ Additional macro commands

Target

Changes the target of the macro commands after target command is issued.

Syntax	Returns	Example
Target (Channel, node)	0 if success, 1 if failed	Target (1, 10)

Target name

Command reads the current target name as string.

Syntax	Returns	Example
TargetName (string)	0 if success, 1 if failed	<pre>//reserve name string new name[100] if(TargetName(name)==0) { printf "target name is %s\n" name }</pre>

Parwrite

Command writes parameter value to current target.

Syntax	Returns	Exmaple
ParWrite (group, index, value)	0 if success, 1 if failed	<pre>//write value 1 to group 12 index 16 ParWrite (12, 16, 1)</pre>

Parread

Command reads the parameter value to current target.

Syntax	Returns	Example
ParRead (group, index)	Parameter value or 0 if failed On error, the error message is shown in the log	<pre>//Read value of the parameter in group 10 index 5 new Float:val = Par- Read(10,5); printf "value of (%d,%d): %f\n", 10, 5, val105;</pre>

Wait

Command delays the macro execution for given time in milliseconds.

Syntax	Returns	Example
Wait (milliseconds)	0 in all cases	<pre>//wait 0.1 seconds Wait(100)</pre>

Endmacro

Command ends the macro execution.

Syntax	Returns	Example
EndMacro()	0 in all cases	<pre>//End execution EndMacro()</pre>

Gotomacro

Command changes the macro execution. Currently running macro execution is terminated.

Syntax	Returns	Example
GotoMacro(string)	0 in all cases	//Change execution to macro jeejee new macrofilename[100] macrofilename = "jeejee.p" GotoMacro(macrofilename)

Message box

Command shows message box with ok button.

Syntax	Returns	Example
MessageBox (string)	0 in all cases	//show messagebox new message[100] message = "dingalongdangdong" MessageBox (message)

11

Control diagrams (pro)

Contents this chapter

This chapter describes the use of control diagrams helping to understand the behavior of a drive.

Control diagrams

Control diagrams provide a graphical presentation of, for example, the control chain of a drive, the speed and torque control chains and the logic of Start and Stop functions. With these diagrams it is possible to see parameter values related to certain functions. Diagrams also illustrate the position of switches according to parameter values, which helps to understand how the drive logic works. The values of parameters can be changed via control diagrams. A control diagram consists of two levels. The top level shows an overview of the diagrams and connections between them.

Note: Control Diagrams are drive-specific and they are not available for all drive types.

Note: When you connect a drive for the first time, it takes sometime to upload control diagrams from the drive. If Control Diagrams are not found in the drive, Drive composer asks to upload diagrams from the local source (PC).

Launch Control Diagrams by clicking a drive and selecting **Diagrams**.

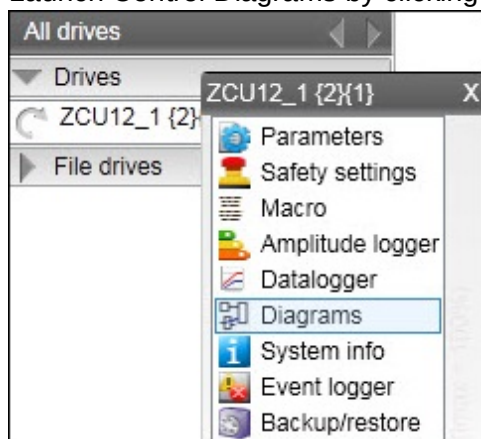


Figure 110. Selecting control diagrams from the drive tree

The top level of a diagram consists of several diagrams. To open one part of a specific diagram, click the top of a box. The figures below show an example of a top level control diagram and a lower level control diagram.

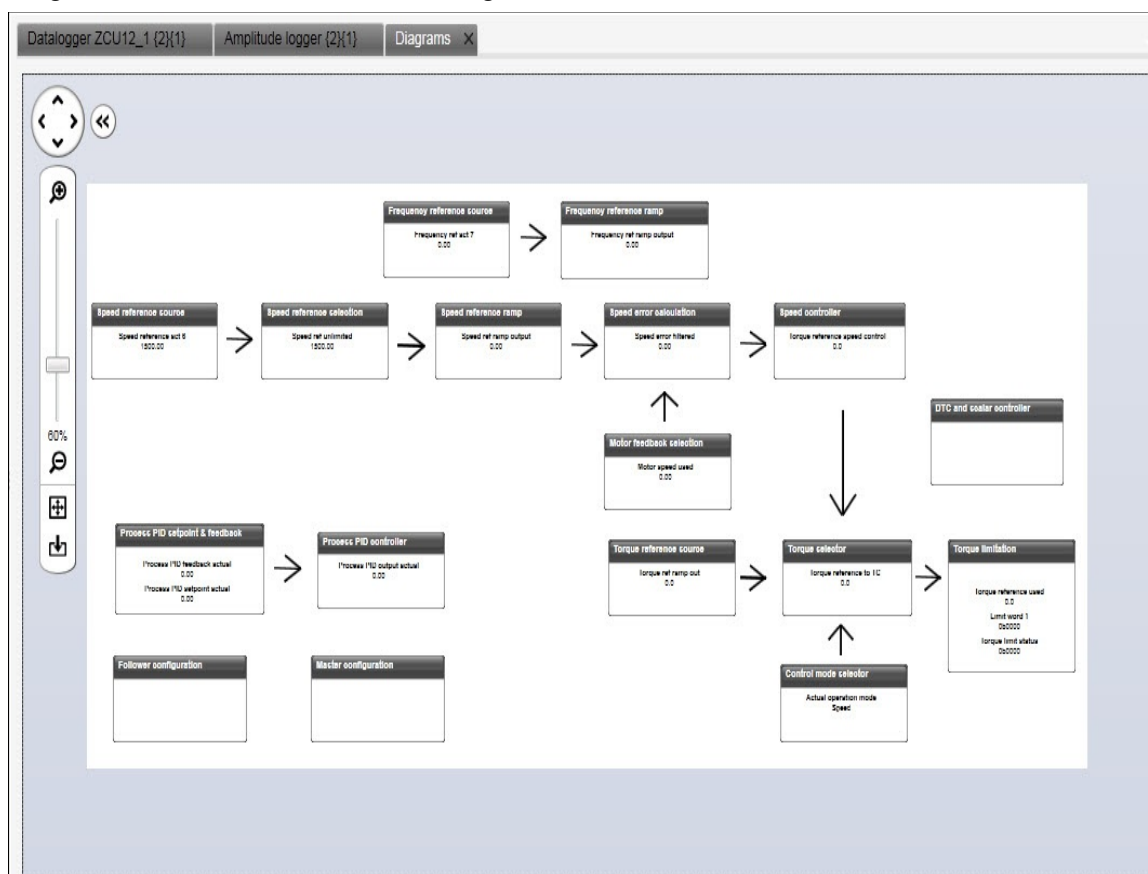


Figure 111. Top level of a control diagram

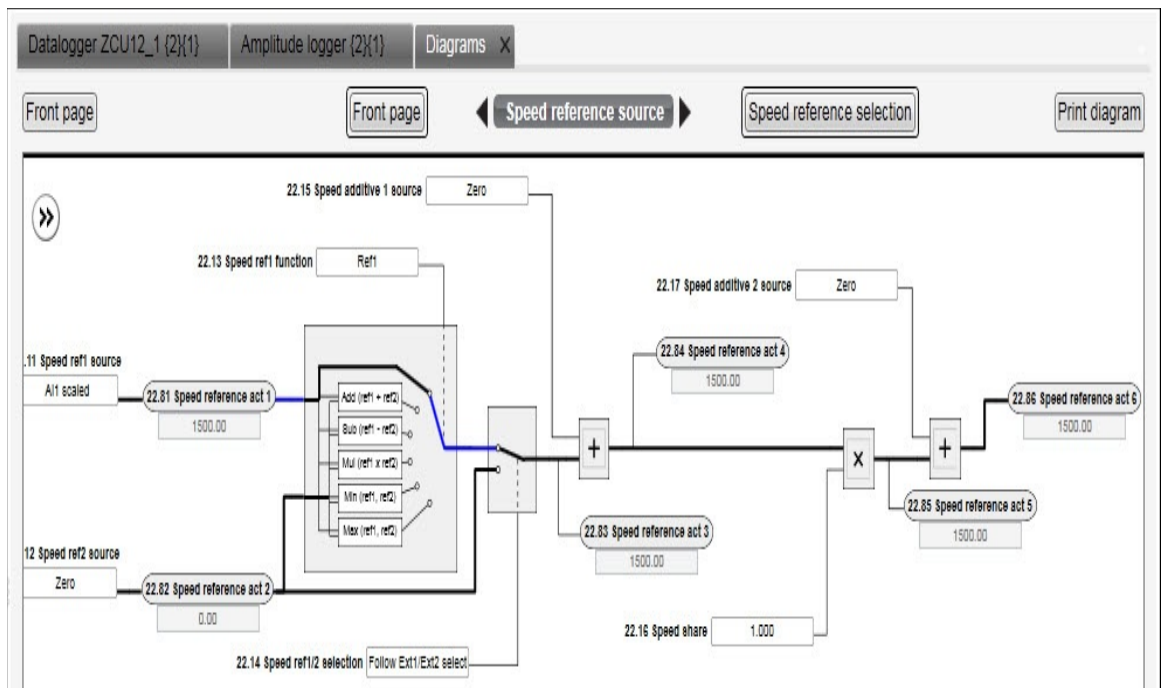


Figure 112. Lower level of a control diagram

To navigate back to the top level of a Control Diagram, click the **Diagrams top** icon. To navigate through the reference chain, click the buttons circled in the figure above.

To zoom the control diagrams, use the zooming tool in the top left-hand corner of a Control Diagram.

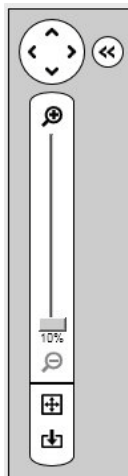


Figure 113. Zooming tool

12

FSO configuration (pro)

Contents of this chapter

This chapter contains the configuration procedure of FSO-11 and FSO-12 safety functions with Drive composer pro and provides an example of how to configure these optional FSO safety functions modules.

Configuring FSO-11 and FSO-12

The safety configuration of FSO-11 and FSO-12 safety functions module is available only in Drive composer pro, DCPT-01 (code: 3AUA0000108087).

Note:

- Only trained persons are allowed to configure the safety functions.
- Stop the motor before configuring the safety functions modules. You cannot download/upload the configuration file to/from safety functions module or change the password when the motor is running.
- You need a password to copy the configuration to the safety functions.

For detailed information about FSO-11 and FSO-12, see the respective safety functions module user's manual:

- FSO-11 safety functions module user's manual (3AUA0000097054 [English]).
- FSO-12 safety functions module user's manual (3AXD50000015612 [English]).

■ Hardware connection

The hardware connection is common for both FSO-11 and FSO-12 safety functions module. For instructions on the hardware connections see FSO-11 safety functions module user's manual (3AUA0000097054 [English])/ FSO-12 safety functions module user's manual (3AXD50000015612 [English]).

The following configuration description assumes that all hardware-related connections are made properly and the ID run procedure of the drive is completed.

■ Setting the FSO-11 safety functions with Drive composer pro

1. Start the drive equipped with the FSO-11 option module using the drive control panel.
See [Using the drive control panel for starting the drive](#) on page 57.
2. Right-click on drive and select **Safety settings**.

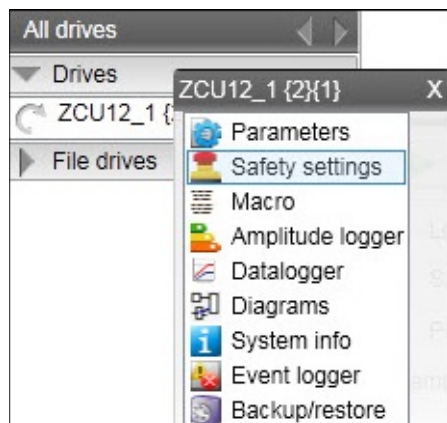


Figure 114. FSO-11: Selecting Safety settings

3. Click **Upload from FSO**.
Note: The motor must be stopped.
 Fault FSO Fault 7A8B appears on the drive.

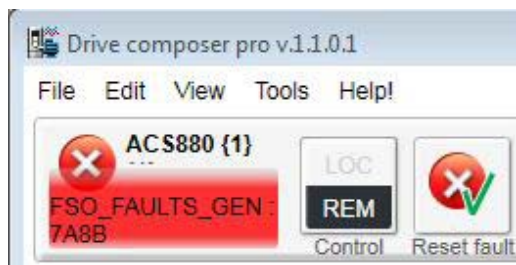


Figure 115. FSO-11: Fault FSO Fault 7A8B

4. Type the password (8 numbers).

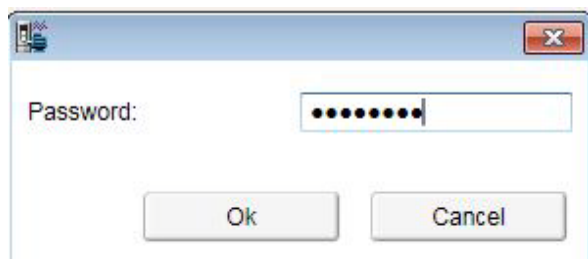
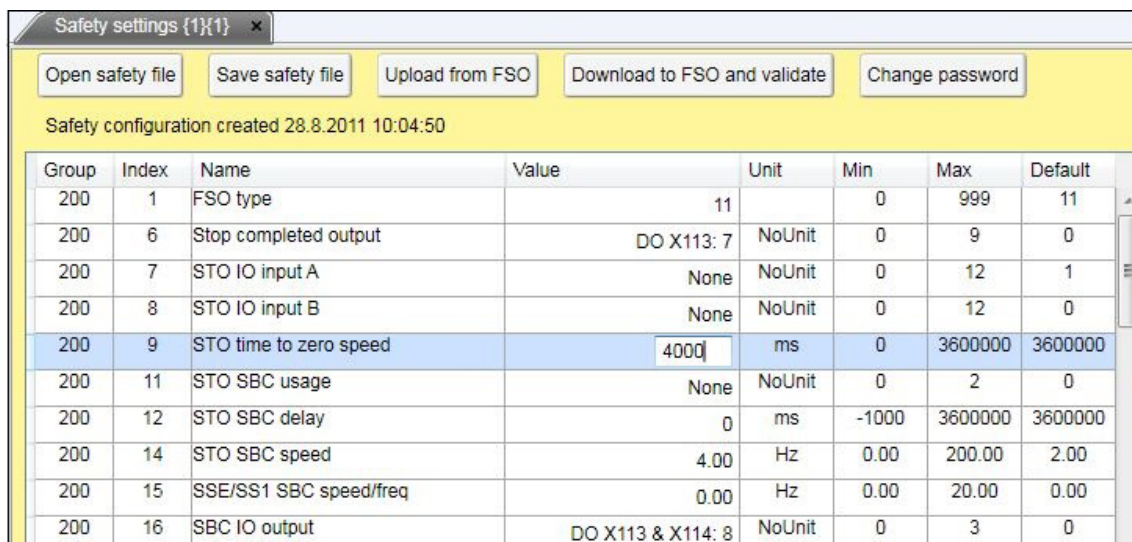


Figure 116. Typing the password

- Double-click on the value field and change all necessary configuration settings to match your safety configuration.



Group	Index	Name	Value	Unit	Min	Max	Default
200	1	FSO type	11		0	999	11
200	6	Stop completed output	DO X113: 7	NoUnit	0	9	0
200	7	STO IO input A	None	NoUnit	0	12	1
200	8	STO IO input B	None	NoUnit	0	12	0
200	9	STO time to zero speed	4000	ms	0	3600000	3600000
200	11	STO SBC usage	None	NoUnit	0	2	0
200	12	STO SBC delay	0	ms	-1000	3600000	3600000
200	14	STO SBC speed	4.00	Hz	0.00	200.00	2.00
200	15	SSE/SS1 SBC speed/freq	0.00	Hz	0.00	20.00	0.00
200	16	SBC IO output	DO X113 & X114: 8	NoUnit	0	3	0

Figure 117. FSO-11: Safety settings tab

- Click the **Download to FSO and validate** button.

The password is required again.

The following Validate dialog box appears.

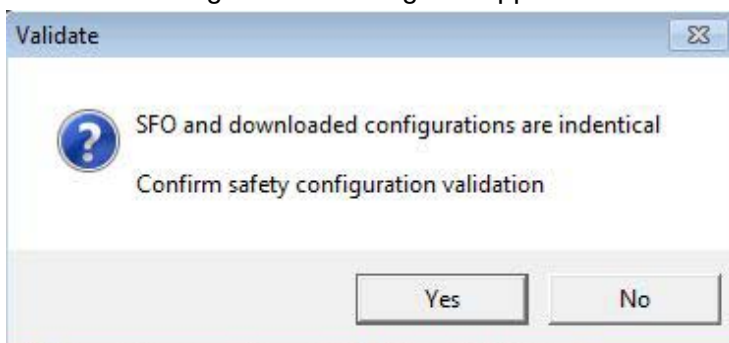


Figure 118. FSO-11 Validate dialog box

- Click **Yes**.

The following dialog box appears.



Figure 119. Safety configuration ok message

- Click **OK**.

- Test your safety configuration when the motor is running.

10. Check the values of parameter group 200.

Note: If there are wrong values, right-click the parameter and select **Refresh the parameter**.

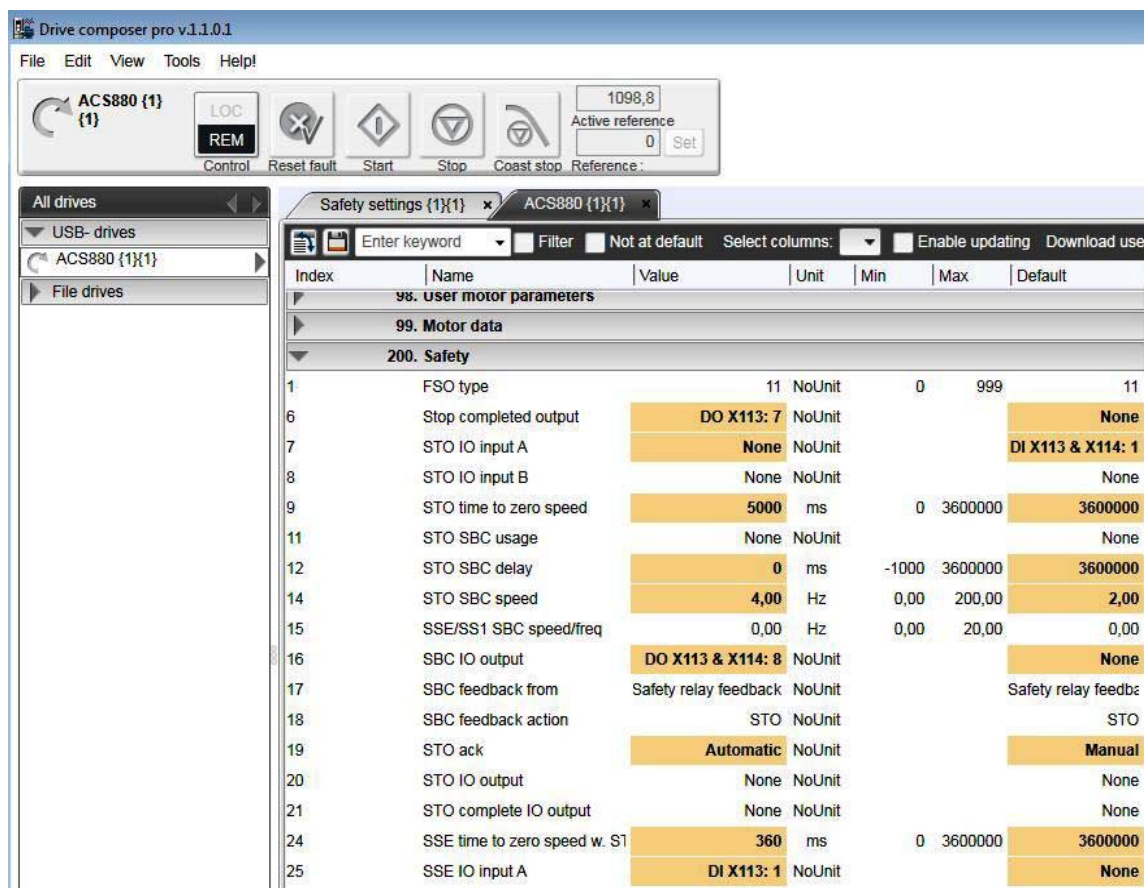


Figure 120. FSO-11: Parameter group 200

11. After testing save your safety settings by clicking **Save safety file**.

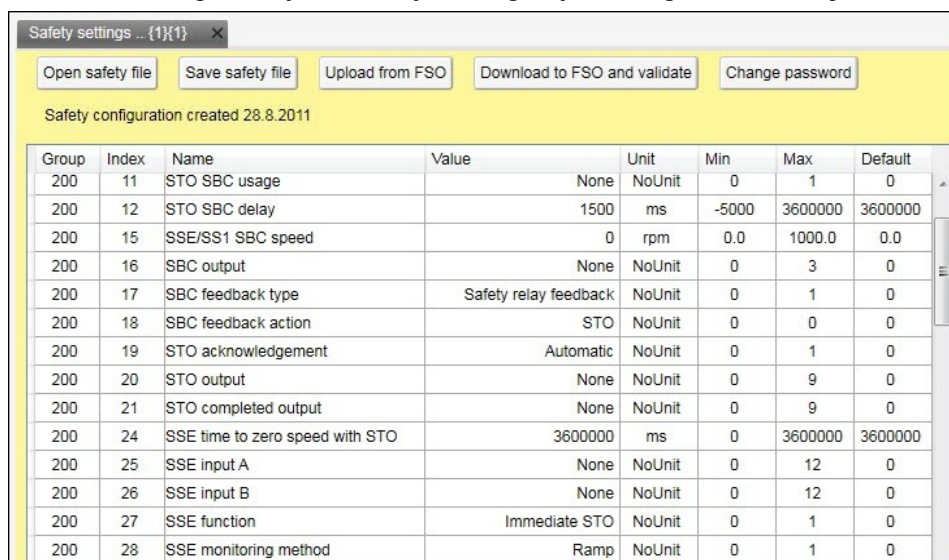


Figure 121. FSO-11: Save safety file button

If you want to change the password of the FSO safety functions module, click **Change password** button.

Note: Stop the motor when you initiate to change the password.

■ Setting the FSO-12 safety functions with Drive composer pro

1. Start the drive equipped with the FSO-12 option module using the drive control panel.
See [Using the drive control panel for starting the drive](#) on page 57.
2. Right-click on drive and select **Safety settings 2**.
The safety configuration that is already available in the drive is displayed. If there is no safety configuration, the view is empty.

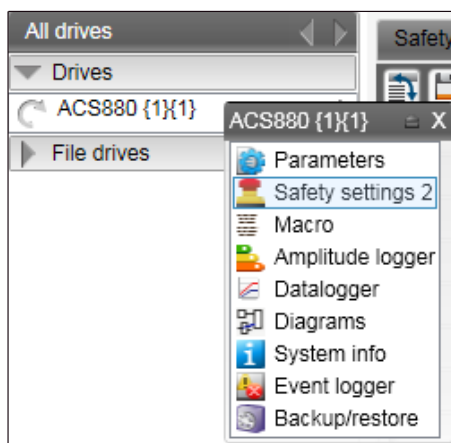


Figure 122. FSO-12: Selecting Safety settings

3. Click **Upload from FSO**.

Note: The motor must be stopped.

When you upload the safety settings from FSO module to PC tool, the FSO goes into Configuration state and indicates a fault. You can exit the Configuration state by rebooting FSO module or by downloading the safety settings to the FSO. Step 7 below.

The Fault **FSO general fault: 7A8B** appears on the drive.

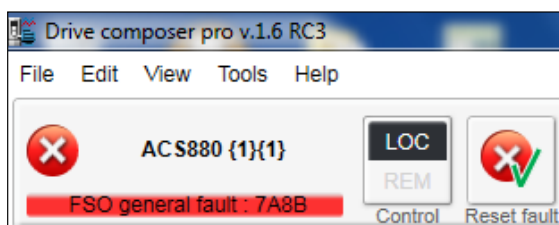


Figure 123. FSO-12: FSO general fault 7A8B

4. Type the password (8 numbers).

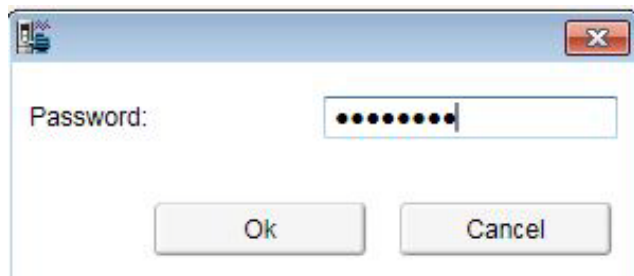


Figure 124. Typing the password

5. Double-click on the value field and change all necessary configuration settings to match your safety configuration.

Safety settings 2 ACS880 {1}{1}							
Open safety file Save safety file Upload from FSO Download to FSO and validate Change password Boot FSO							
Version 2.50.14.0 Created 5/21/2014 10:34:59 AM by INMAVEN1							
Group	Index	Name	Value	Unit	Min	Max	Default
Safety							
200	21	SLS1 activity and version	Version 1		0	1	0
200	22	SLS1 limit negative	-200.0		-35880.0	0.0	-200.0
200	23	SLS1 limit positive	200.0		0.0	35880.0	200.0
200	31	SLS2 activity and version	Version 1		0	1	0
200	32	SLS2 limit negative	-400.0		-35880.0	0.0	-400.0

Figure 125. FSO-12 configuration in Safety group 200

Set the following safety function parameters:

- General parameters: Check that the motor parameters are correct.
- I/O: Check that I/O parameters are set according to the installation (wiring) plan. Remove diagnostic pulsing from any unused I/O. Check possible safety relays and cascade connections.
- Safety functions: Check all safety settings. You must at least check and set the STO and SSE related settings, regardless of whichever FSO safety functions you use. The FSO activates the STO and SSE functions in internal fault situations. The FSO uses the STO and SSE functions for making the system safe. All other functions are used only for monitoring the drive.

Note that only the group **Safety** is referred with group number and index numbers (see figure [FSO-12 configuration in Safety group 200](#)) and all other group names like **FSOGEN**, **STO** and so on have only index numbers (see figure [FSO-12 configuration with only group names](#)).

For examples of configuration settings and list of group names, see *FSO-12 safety functions module User's manual (3AXD50000015612[English])*.

Safety settings 2 ACS880 {1}{1}							
Open safety file Save safety file Upload from FSO Download to FSO and validate Change password Boot FSO							
Version 2.50.14.0 Created 5/21/2014 10:34:59 AM by INMAVEN1							
Group	Index	Name	Value	Unit	Min	Max	Default
200	223	Safety fieldbus adapter slot	FBA A		1	2	1
200	254	CRC of the configuration	36990	NoUnit	0	65535	0
FSOGEN							
	1	FSO General settings ver	v1	NoUnit	1	1	1
	11	Stop completed output	None	NoUnit	0	9	0
	21	Motor nominal speed	1500.0	rpm	1.0	35880.0	1500.0
	22	Motor nominal frequency	50.00	Hz	1.00	598.00	50.00
	31	Transient mute time	0	ms	0	1000	0
	41	Power-up acknowledgement	Automatic	NoUnit	0	3	1
	42	Acknowledge button input	None	NoUnit	0	12	0
	51	Zero speed without encoder	90.0	rpm	0.0	600.0	90.0
	61	STO indication ext request	Event	NoUnit	0	3	3
	62	STO indication safety limit	Fault	NoUnit	0	3	1
	254	CRC of the whole configuration	36990	NoUnit	0	65535	0
STO							
	1	STO version	Version 1	NoUnit	1	1	1
	2	STO acknowledgement	Automatic	NoUnit	0	3	0

Figure 126. FSO-12 configuration with only group names

6. Click **Save safety file** to save the FSO configuration to your PC.
7. Click **Download to FSO and validate**. The password is required again. The following Validate dialog box appears.

Note: You can boot FSO without downloading to FSO using **Boot FSO**.

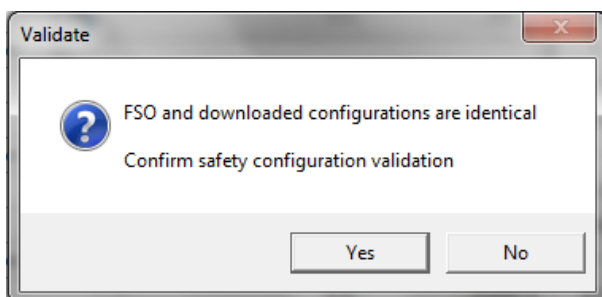


Figure 127. Validate dialog box

8. Click **Yes**. The following dialog box appears.



Figure 128. Safety configuration ok message

9. Click **OK**.
10. Test your safety configuration when the motor is running.
11. Right-click on drive and select **Parameters** to check the values in parameter group 200.

Note: If there are wrong values, right-click the parameter and select **Refresh the parameter**.

Index	Name	Value	Unit	Min	Max	Default
98. User motor parameters						
99. Motor data						
200. Safety						
1	FSO speed ch1	0.00	rpm	-34028230	34028230	0.00
2	FSO speed ch2	0.00	rpm	-34028230	34028230	0.00
3	FSO DI status	0b0000	NoUnit	0b0000	0b1111 11'	0b0000
4	FSO DO status	0b0000	NoUnit	0b0000	0b1111 11'	0b0000
5	FSO control word 1	0b0001	NoUnit	0b0000	0b1111 11'	0b0000
6	FSO control word 2	0b0000	NoUnit	0b0000	0b1111 11'	0b0000
7	FSO status word 1	0b0010 1011	NoUnit	0b0000	0b1111 11'	0b0000
8	FSO status word 2	0b0000	NoUnit	0b0000	0b1111 11'	0b0000
9	Drive status word 1	0b0000	NoUnit	0b0000	0b1111 11'	0b0000
10	Drive status word 2	0b0110 0000 0000	NoUnit	0b0000	0b1111 11'	0b0000
254	CRC of the configuration	36990	NoUnit	0	65535	0

Figure 129. FSO-12: Parameter group 200

12. After testing save your safety settings, click **Save safety file**.

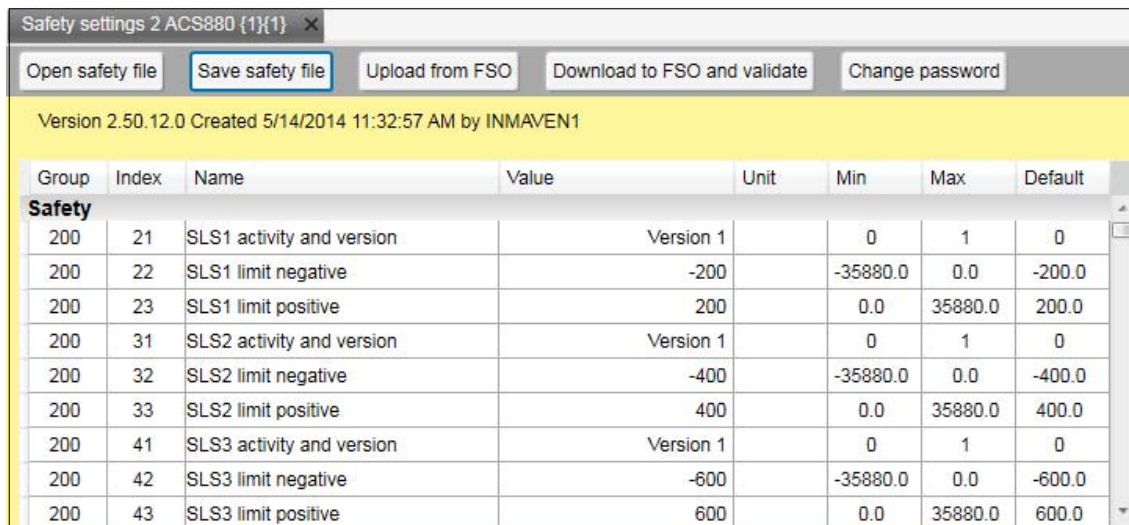


Figure 130. FSO-12: Save safety file button

If you want to change the password of the FSO safety functions module, click **Change password** button.

Note: Stop the motor when you initiate to change the password.

■ Printing the safety functions configuration report (Online)

With FSO-12 installed, you can print the online safety functions configuration report.

Note: The print option is available only in Drive Composer version 1.7 and later.

1. From the **Safety settings 2** view, click **Configuration Report**.

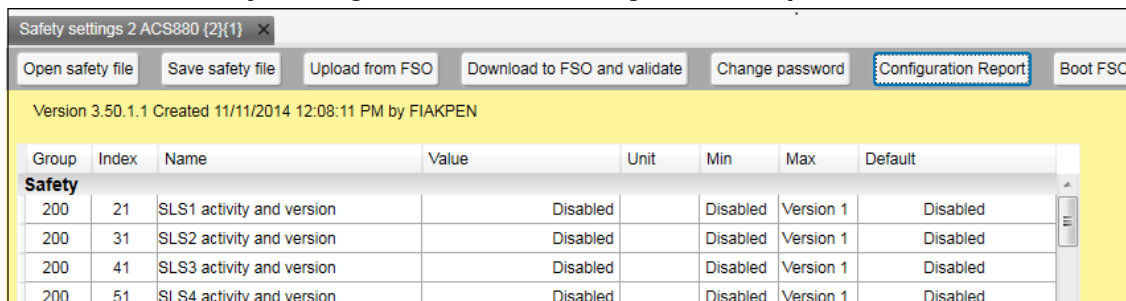


Figure 131. Safety configuration report: Safety settings 2 -> Print configuration Report

2. Select a print template and click **Continue**.

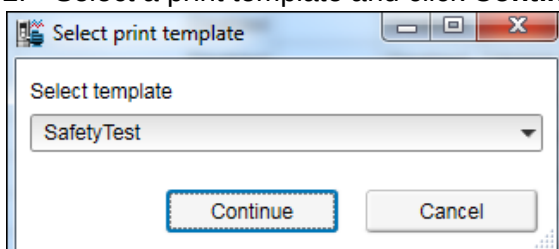


Figure 132. Safety configuration report: Select print template

3. Fill in the Drive and FSO version information. Click **Next**.

Drive and FSO version information

Date and Time: 12/12/2014 10:35 AM

Safety parameters CRC: 31928 *

Drive firmware version: 1.91.0.0 *

Drive rating id: 341 *

Drive serial number: 1140102008 *

FSO module type: 12 *

FSO module revision: 1.0 *

Buttons: Help, Cancel, Back, **Next**, Print preview

Figure 133. Safety configuration report: Drive and FSO information

The next screen(s) contain different aspects of safety configuration such as configured safety functions, commissioning checklist, and so on. Fill in the required details and click **Next**.

Safety Configuration Report

List of configured safety functions and acknowledgement styles

SLS1	Disabled
SLS2	Disabled
SLS3	Disabled
SLS4	Disabled
SS1	Version 1
SSE	Version 1
SMS	Disabled
STO	Version 1
SBC	None
POUS	Disabled

Buttons: Help, Cancel, Back, **Next**, Print preview

Figure 134. Safety configuration report: List of configured safety functions

Safety Configuration Report

FSO commissioning check list

FSO commissioning and configuration

- ☐ Drive and FSO-xx unit firmware are compatible
- ☐ FSO data cable is connected between drive x12 and FSO x110 connectors. STO cable is connected between drive xsto and FSO x111 connectors.
- ☐ FSO is properly installed to it's place and emc screw is tightened
- ☐ Sufficient external 24V power supply is available and connected to FSO x112 connector
- ☐ If you have FSO configuration for FSO-xx unit, it has been downloaded and validated with Drive composer Pro software
- ☐ I/O connectors are attached to FSO module
- ☐ Drive starts normally and any unwanted safety related error or events do not occur
- ☐ Any exceptions are documented and fixed / approved and traceability of changed parts is taken care of
- ☐ **Safety related tests performed during commissioning**

If any changes have been done to the safety functions during commissioning (changes after delivery from factory, e.g. to circuit drawings or safety configuration) they need to be documented in the DIB. All safety functions in which the drive is playing any role, have been tested during the commissioning and no deviations were detected in the safety funct or the customer has accepted these detected deviations.

Buttons: Help, Cancel, Back, **Next**, Print preview

Figure 135. Safety configuration report: FSO commissioning check list

4. In the final screen fill in the required details and click **Print preview**.

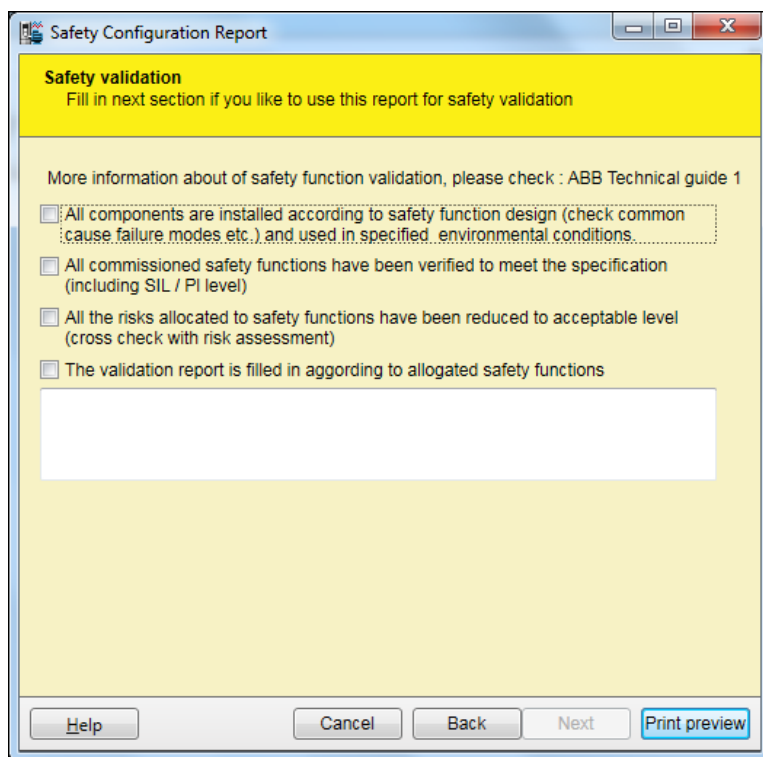


Figure 136. Safety configuration report: Print preview

5. Select the required printer settings and click **Print**.

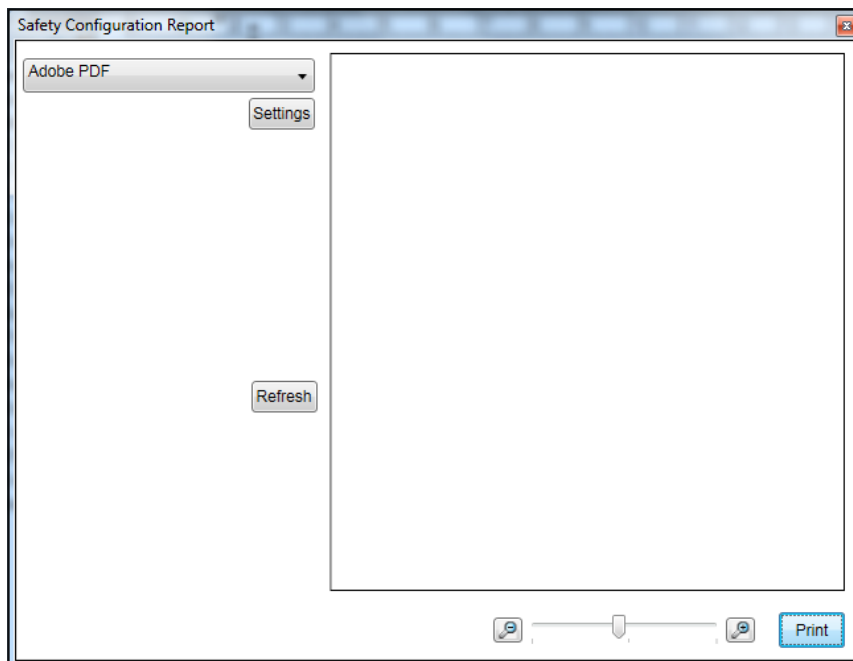


Figure 137. Safety configuration report: Printer settings

The configuration and commissioning report is printed based on the selected printer settings.

■ Printing the safety functions configuration report (Offline)

To print a FSO safety functions configuration report in the Offline mode, you must have a saved safety file. See section [Setting the FSO-12 safety functions with Drive composer pro](#) (page 123).

Note: The print option is available only in Drive Composer version 1.7 and later.

1. Click **Tools** -> **Safety Configuration Report**.

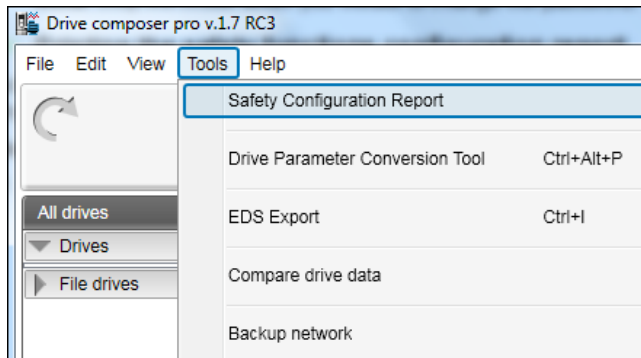


Figure 138. Safety configuration report: Tools -> Safety Configuration Report

2. Select the saved file to print and click **Continue**.

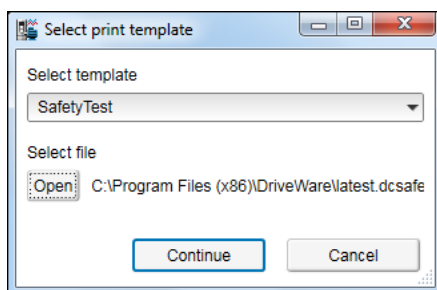


Figure 139. Safety configuration report: Select print file

Continue from step 3 in section [Printing the safety functions configuration report \(Online\)](#), page 127.

13

Other functions

Contents of this chapter

This chapter describes how to create a backup file of a drive and restore a drive. In addition, there are instructions on how to use the Drive parameter conversion tool.

Creating a backup of a drive

1. Click **Backup/restore**.



Figure 140. Backup/restore command

2. Select a folder for the backup drive and give a name of your backup.
 3. Click **Backup** to start the backup process.
The backup process takes a few minutes.
-

Restoring a drive

1. Click **Backup/restore**. See figure [Backup/restore command](#).
2. Click **Restore** to select the backup file to the drive with default settings.

All available components are restored from the backup file. All unavailable components are preserved in the drive.

3. To select a custom set of components to be restored to the drive, click **Advanced restore**.

The parameter values that are not written to the drive are listed in the restore report after the restore process. If there are grey items in the advanced list, the drive does not allow the item to restore.

Note: Advanced restore option is available only in Drive composer pro version.

Using the Drive parameter conversion tool (pro)

The parameter files of some ACS800/ACS600 ABB drive types commissioned and maintained with DriveWindow can be accessed with Drive composer via the Drive parameter conversion tool.

Note: Not all ACS800/ACS600 drives and software are supported.

1. Go to **Tools** -> **Drive parameter conversion tool**.

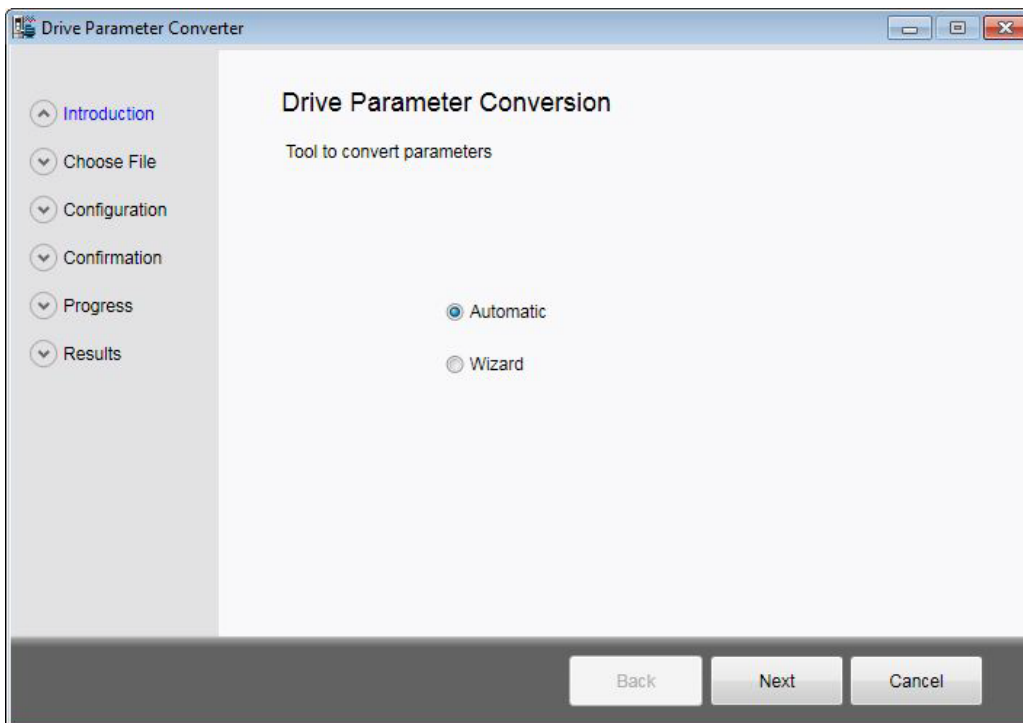


Figure 141. Drive parameter conversion – Introduction

2. Click **Next** and select the appropriate ACS800/ACS600 parameter file.

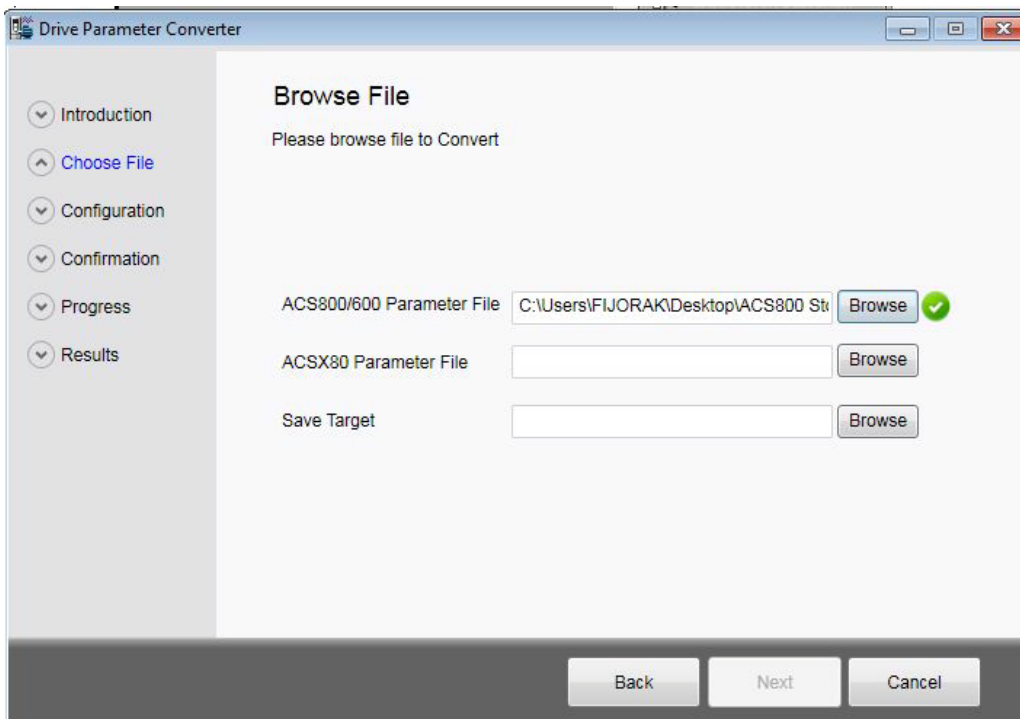


Figure 142. Drive parameter conversion – Browsing the ACS800/600 file

3. Select an empty ACx80 parameter file with default values.

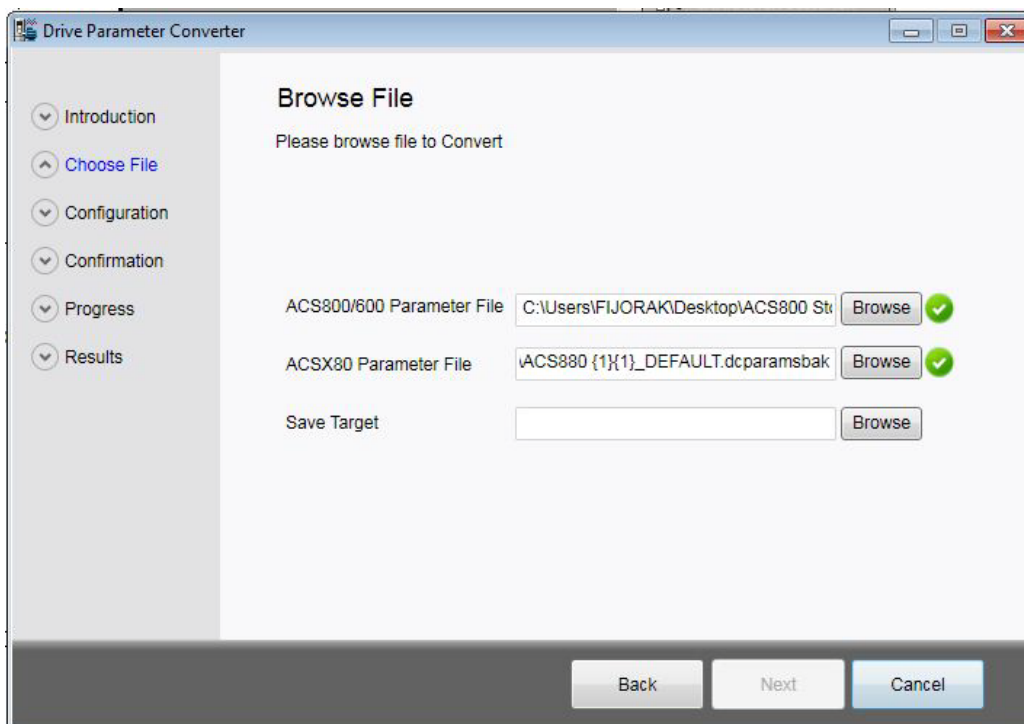


Figure 143. Drive parameter conversion – Browsing the ACSX80 parameter file

4. Select name for the drive.

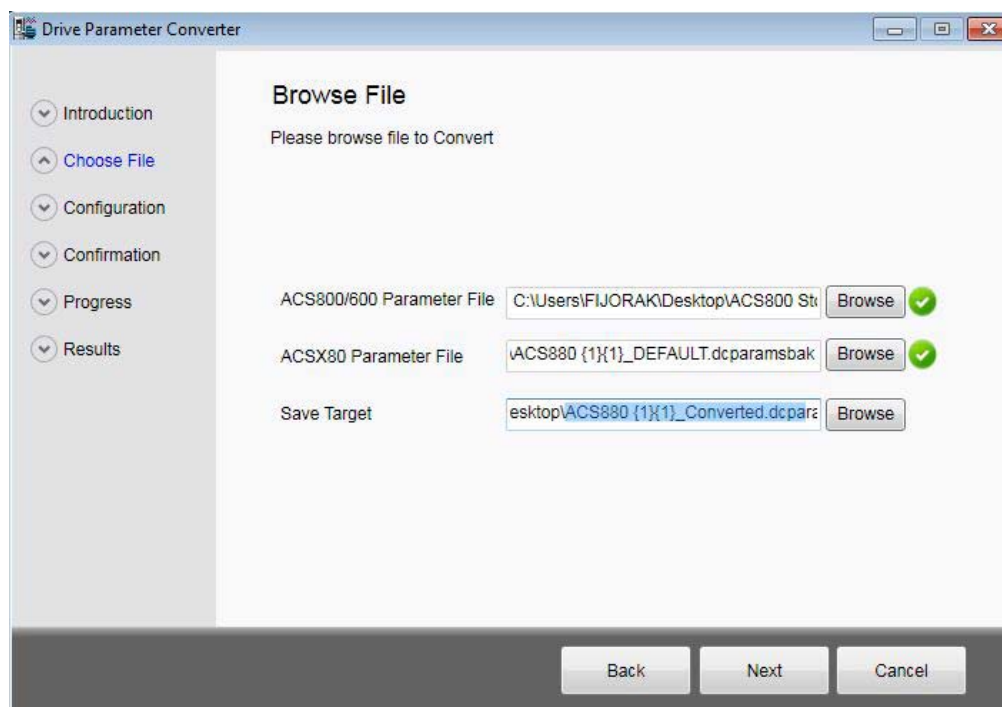


Figure 144. Drive parameter conversion – Save target

Note: Do not overwrite the empty file.

5. Click **Next**.6. Answer **Yes**.

The Conversion report shows the parameters which are converted successfully and failed. Read the report carefully and fix the parameter values manually for which the conversion was not successful.

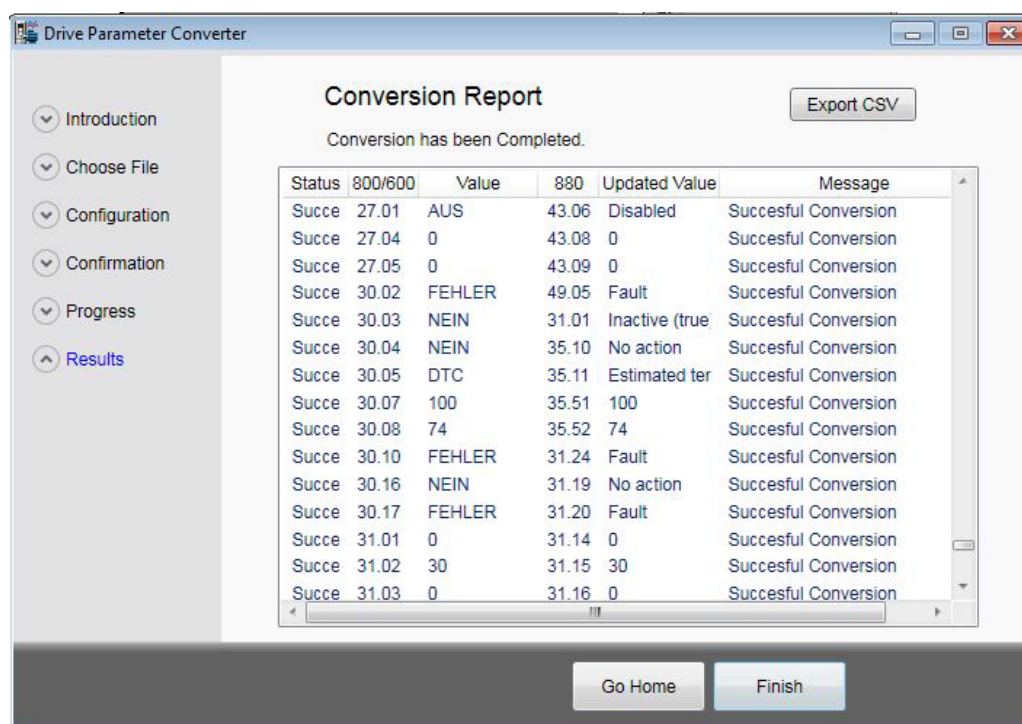


Figure 145. Drive parameter conversion – Results

Using the PSL2 data logger (pro)

With BCU-x2 control unit, you can upload the PSL2 data logger files from the drive flash memory to PC local hard drive. The files contain real time data from the converter modules that help in fault tracing and analysis.

Note: The files can be uploaded from drive to local computer only. You cannot read the contents or open the files. For any further assistance contact ABB customer support.

■ Uploading PSL2 data logger files

1. Go to **Tools** → **PSL2 data logger**.

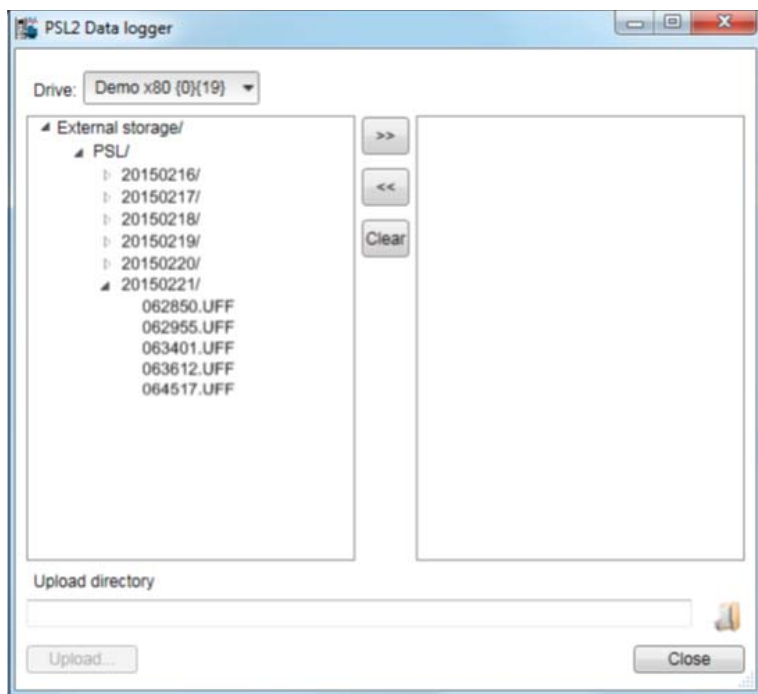


Figure 146. PSL2 Data logger

2. Using the left or right arrow buttons, place the PSU data logger file(s) that you want to upload in the right side box.
3. In the Upload directory field, click  and select an upload folder in your PC local hard drive.
4. Click **Upload...**
The selected files are transferred to your local folder.

Adaptive programming

Adaptive programming is a feature to control the operation of a drive by parameters. Each parameter has a fixed set of choices or a setting range. The parameters make the programming easy, but the choices are limited. You cannot customize the operation further.

The Adaptive programming makes easy customizing possible without the need of a special programming tool or language. The program is built of function blocks.

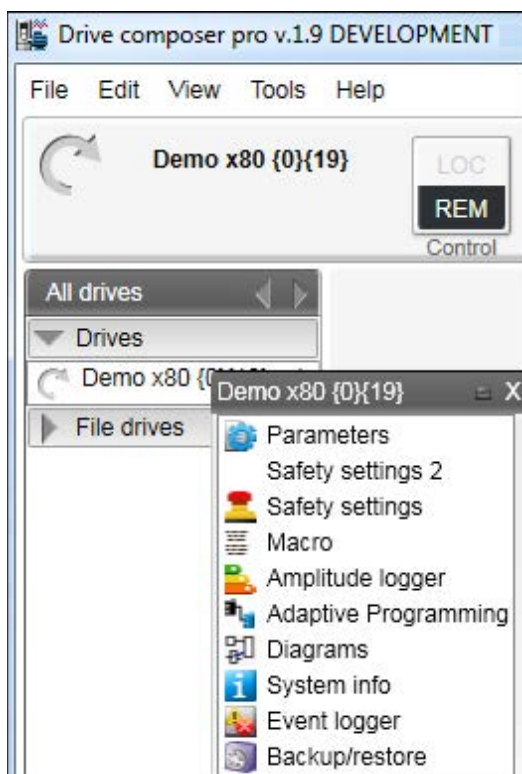


Figure 147. Adaptive programming

For further information on Adaptive programming, refer *Adaptive programming application guide* in [List of related manuals](#).

Further information

Product and service inquiries

Address any inquiries about the product to your local ABB representative, quoting the type designation and serial number of the unit in question. A listing of ABB sales, support and service contacts can be found by navigating to www.abb.com/searchchannels.

Product training

For information on ABB product training, navigate to new.abb.com/service/training.

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